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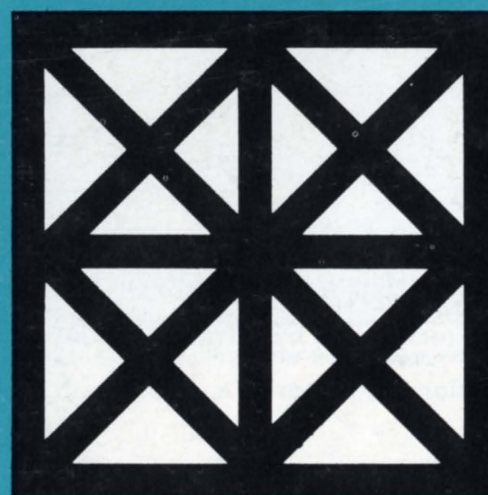
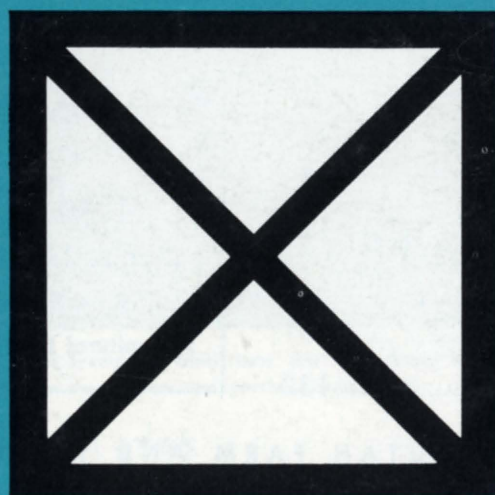
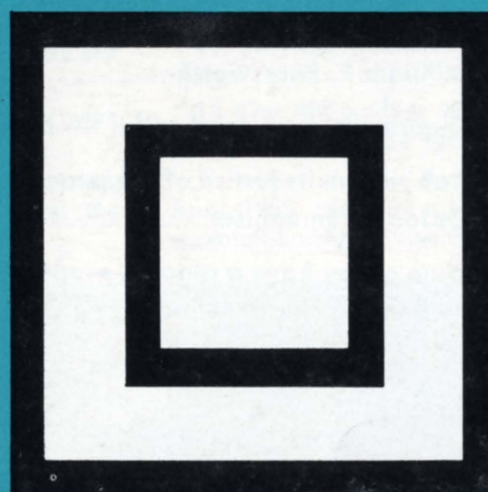
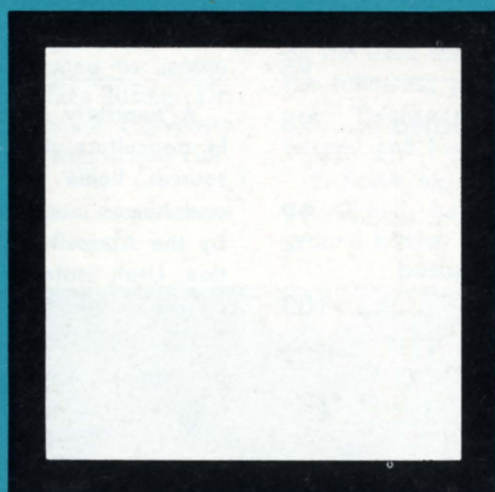


UTAH SCIENCE

Vol. 26 - No. 4

December, 1965

AGRICULTURAL EXPERIMENT STATION • UTAH STATE UNIVERSITY • LOGAN



Man has many characteristics that distinguish him from other inhabitants of the earth. One of the most significant is his use of symbols to convey ideas. These symbols range from highly refined verbal and written languages to purely visual representations of concepts.



Through the ages the square has symbolized many things. It is used here in one of its most ancient senses — as the emblem of world and nature.



This has served in some eras as the sign of simple activity. It symbolizes the efforts of mankind filling the space assigned to them.



The multiform activities of man are shown by repeating the preceding figure several times in different compartments.



The square within a square has been used to indicate orderliness.

These symbols graphically illustrate the major theme of this issue of Utah Science. The Utah Legislature has authorized and activated a program designed to help the state establish meaningful long-range goals. Working in the framework of nature's endowments, through the simple and complex activities of people, an orderly progressive future may be achieved. — Lois M. Cox.

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UTAH FARM AND HOME SCIENCE

A quarterly devoted to research in agriculture, land and water resources, home and community life, and human nutrition and published by the Agricultural Experiment Station, Utah State University of Agriculture and Applied Sciences, Logan.

The magazine will be sent free on request. Address all correspondence to the editor or the authors of the various articles.

Articles appearing in Farm and Home Science may be reprinted if credit is given to the author, Utah State University, and to Farm and Home Science.

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BRIGHAM CITY POINTS THE WAY

Community development is a general term and includes many possible methods of expression. The term is sufficiently broad to include any action taken by residents of a town or city to improve their social, economic, and physical environment. One popular facet of community development in Utah is found in community beautification, which means break up, burn up, clean-up, fix-up, and paint-up. Changing its physical environment payed off for Brigham City this year.

On September 25, 1965, the Utah Municipal League announced that Brigham City had won the Utah Community Beautification Contest. Mrs. John Alex, President of the Spade and Hope Garden Club, club members, Mr. Willis Hansen, mayor of Brigham City, and city council members all cooperated to accomplish a municipal face lifting. Dr. Arvil Stark, Utah State University Extension Services Ornamental Hor-

●
WILLIAM F. FARNSWORTH is district director of the **USU Extension Services**.

ticulturist provided technical assistance which guided the extensive beautification work.

CLEAN-UP PROJECTS

At least 57 different clean-up projects were completed. The clean-up, campaign resulted in the planting of nearly 700 trees, 4,000 shrubs, and more than 1,500 rose bushes by private property owners. Several dirt roads were surfaced with asphalt. Curbs and gutters were installed. About 250 homes were given a fresh coat of paint, and 14 business establishments painted and beautified their main entrances. Club members personally visited private landowners and obtained permission, or the owners agreed to do the work themselves, to carry out the following projects:

1. Twenty-four old sheds were burned and hauled away.
2. Seven old houses were burned, demolished, hauled away, and the ground leveled and left clean.

3. Three delapidated fences were removed.

4. One old-garage was demolished, removed, and the spot left clean.

5. Five old building foundations were removed, the excavations filled in, and the ground leveled off.

6. About 50 tons of old scrap lumber were burned.

7. Three-hundred-fifty 12-yard truck loads of debris and seven tons of scrap metal were removed.

8. Six-hundred-twenty-five dead and trashy trees were removed.

9. Thirty-three old junked cars were removed and more are being moved.

10. Ninty lots were cleaned up.

11. Fifty-five tree stumps were removed.

12. One old outdoor movie screen was removed and the site left clean.

In view of the starting date, April 1965, this was a tremendous accomplishment for one community.



Figure 1. The beautiful Sycamores which now line Main Street in Brigham City were planted in 1927. The newly organized Shade Tree Commission collected the tax monies and purchased the trees.

HOW IT STARTED

During the winter of 1964-65, certain citizens became increasingly aware of the state and national clean-up campaigns then underway. At their January meeting, Spade and Hope Garden Club members voted to sponsor such a campaign in Brigham City. Club members scouted the city and found a great deal of property in a state of disrepair, many delapidated old houses, some junk yards, brush heaps, abandoned autos, and remnants of old farm buildings. These findings motivated club members to put all their efforts into a landscape improvement project. They contacted Dr. Stark and with his support and guidance they in turn met with the mayor, the city council, and soon involved service clubs, local organizations, institutions and private citizens in the clean-up, fix-up, paint-up campaign. On February 15, 1965 the city council appointed Mrs. Alex chairman of the Brigham City Beautification Campaign. Club members were asked to serve as committee members. On April 1, Mayor Hansen officially proclaimed the year 1965 as Landscape Improvement Year and urged all citizens to cooperate. The kick-off meeting was held Monday, April 5, with Dr. Stark providing the program. Actual work got underway April 10. So successful were committee efforts that nearly every civic club, the news media, various schools, and many private citizens participated in the effort.



Fig. 2. This dilapidated frame building was a pushover for a dozer.



Figure 3. A well placed match helped dispose of what the dozer left.

PARTICIPATING ORGANIZATIONS

Organizations assisting were the Brigham City Beautification Committee, Spade and Hope Garden Club, Box Elder Chamber of Commerce, Brigham City Department of Public Works, Brigham City Junior Chamber of Commerce, Box Elder News and Journal, Junior High School students, Civic Improvement Clubs, Golden Spike Squadron, Brigham City Fire Department, students and teachers of the Intermountain Indian School, The Shade Tree Commission, Boy and Girl Scout troops, Utah State University Extension Services, various church organizations, and, of course, many private individuals and business firms.

OTHER HELPERS

The Spade and Hope Club members surveyed the community and designated the work projects. Veran Booth, executive secretary of the Brigham City Chamber of Commerce, teamed up with Neil Smith, director of Brigham City Public Works Department. They procured heavy machinery and organized its use. Both city and private equipment was volunteered. Fife Products Company, Inc., and Parson Red-E-Mix and Paving Company provided bulldozers, loaders, trucks, and other special equipment. Charles Claybaugh, publisher of the Brigham City News and Journal, and photographer Bruce Keys teamed up to keep citizens well informed of each step in the campaign. Under the leadership of Mr. Smith, rubble and trash pick-up programs were established. Local residents piled their trash at the edge of the street in front of their homes on designated days and city trucks hauled the refuse away. City trucks were also cleaned and painted white, and a new garbage truck was purchased. One of the outstanding projects was the beautification of the Pioneer Memorial Nursing Home. Several years ago the Box Elder County Commissioners requested Extension Agent Fullmer Allred to prepare a landscape beautification plan for the



Figure 4. To raze an old adobe or brick house required more effort. Holes were punched in the walls to allow more draft, then the building was fired.

facility. Mr. Allred in cooperation with Dr. Bernard Wesenberg of the Horticulture Department at Utah State Univeristy, developed a design. When Brigham City began cleaning up this year, it was very easy for the vocational agricultural boys to know where to plant the trees and shrubs which were provided for beautifying the grounds. This foresight in planning facilitated the general development of the grounds around the nursing home.

Photographs played an important part in the success of the clean-up program, by graphically showing what was accomplished. Thiokol Chemical Company provided funds to purchase film and to process the pictures. Many pamphlets, booklets and brochures were distributed to assist the people in selecting tree and shrub varieties and how to care for their grounds. Mr. Allred distributes more than 1,700 United States Department of Agriculture and Utah State University Extension bulletins per year. These bulletins describe insect and disease control of flowers and shrubs and other garden management practices.

When Mrs. Alex was asked the question, "What is the local feeling about all this beautification activity?" she responded, "We are not through yet! We have plans for more clean-up activities. Long hours, hard work, and untold obstacles have been almost overwhelming at times, but the end results are much

appreciated by the residents of Brigham City." One concrete, positive result of the face lifting in Brigham City was a clean-up ordinance passed by the city council, said Dr. Stark.

SOME HISTORY

To appreciate the achievement, one might review a little local history. At least 40 years ago, Brigham City was concerned about beautification. In 1925, through the leadership and assistance of Utah State University's Horticulture Specialist, Emil Hansen, and county agent Robert Stewart, the city council organized a Shade Tree Commission, collected tax monies,

and purchased trees. In 1927 the beautiful Sycamore trees which now line the Main Street from Second South to Fifth South were planted. Curbs, gutters, and parking areas were developed at the time the trees were planted. During the depression years of 1935-1936, the tree planting project was extended from Fifth South to Seventh South and from First North to Seventh North. In 1937 and 1938 Lindon trees were planted along Second East and about 10 years ago, Schwedler Maple trees were planted along First West. Recent action of the city council cleared the way for the planting of more Sycamore trees along Main Street so that the trees will extend all the way to the southern limits of the city.

OLD REPORTS

Research into old Extension Service annual reports for Box Elder County reveals that other community improvement projects over the years have included such things as rat control, landscaping and beautifying public parks and buildings, controlling weeds along roadsides and ditches, painting fences, homes and barns, projects to increase the city water supply, and conducting fairs and flower shows.

In 1928 Box Elder County Extension Agent, Robert Stewart recorded in his annual report that he had been appointed to the city planning



Figure 5. Heavy equipment, donated by local business firms, then moved in, scooped up the remaining trash and debris, and hauled it off to the dump.

commission and assigned to help improve the city park and increase the city water supply. In 1930 Mr. Stewart reported that he and a Mr. Geneaux, in cooperation with Mayor Halverson, blazed trees in the city park prior to their removal. Also, Mr. Stewart planted 25 Golden Willow bushes around the small lake in the Brigham City Municipal Park. These willows are much enjoyed today. In 1930, Mr. Stewart also recommended the drilling of a well in Mantua Valley so that additional irrigation water would be available to Brigham City. The resulting well produced better than two cubic feet per second.

During the post war years of rapid growth and new building construction, city beautification fell behind, in some instances, and the city's heritage was forgotten until some garden club members decided to bring their community up to date.

DOCUMENTATION

Communities which participated in the beautification contest sponsored by the Utah Municipal League were asked to submit a scrapbook documenting their campaign accomplishments.

The Spade and Hoppers made certain that all facets of their clean-up efforts were recorded in the club scrapbook. The large looseleaf book is covered with hand tooled cowhide and was made by one of the members. In it are photographs and reports of 57 projects. Included are such details as the number of paid and volunteer man hours, types of machinery and its donors, and participating companies, organizations, and individuals.

ANY TOWN CAN DO IT

Although Brigham City was singled out to receive the prize, other towns and cities throughout Utah also underwent municipal face-lifting treatments. Several cities completed even more clean-up projects than Brigham City. A new sense of pride on the part of its citizens was noted in each community which carried out such a campaign.

As the leaders in Brigham City discovered, the problems of municipal clean-up is fraught with prob-

If stubble-mulched . . .

Winter Wheatlands May Need Sulfur

Nitrogen fertilizer may be more efficient on stubble-mulched winter wheat when combined with sulfur, the US Department of Agriculture reports.

In recent tests a tie-up of available soil sulfur was pinpointed as part of the reason for decreased yields on some stubble-mulched fields, even those fertilized with nitrogen.

The imbalance is caused by microorganisms that decompose the wheat straw — they use up soil sulfur as well as nitrogen.

Wheat straw was mixed in soil from a summer-fallowed field at a rate about equivalent to $1\frac{5}{8}$ tons per acre. The soil-straw mixture was placed in containers and incubated at constant temperature for 2 weeks. Then winter wheat was planted in the containers, allowed to grow for a month, and cut.

Wheat grown in the soil-straw mixture yielded considerably less

leaves, ranging from public apathy to finding out "Who owns that empty, tumble-down building?" But in each city or town where such projects were completed, the determined leaders, though few at first, discovered that the spirit of community improvement was contagious. As people caught the vision of how their neighborhood would look if the eyesores were gone, they pitched in and literally changed the face of the land.

Dr. Stark stresses the fact that any interested citizen, in any community, can form the nucleus for a local development effort. He emphasizes that free professional guidance is available to any group desirous of improving their community. Members of the Utah State University Extension Services will help with advice, technical assistance and planning if asked, he said.

vegetation than wheat grown in containers of plain soil. Addition of nitrogen fertilizer increased yield in the soil-straw mixture more than in plain soil, but yields were still highest in the soil without straw.

When sulfur was added with the nitrogen, plants grown in the soil-straw mixture yielded as much as the check plants, indicating that the added sulfur replaced the available soil sulfur being used by the microorganisms in decomposing the straw.

Plants with sufficient sulfur for normal growth had a ratio of about 17 parts nitrogen to 1 part sulfur in the tissue. Plants fertilized with nitrogen but not sulfur had an average nitrogen-to-sulfur ratio of 28 to 1; this lack of sulfur limited the formation of plant protein and caused nonprotein nitrogen compounds to accumulate in the tissue.

By comparing the nitrogen-to-sulfur ratios in plant tissue with that in soil organic matter a conclusion may be drawn which may prove to be a reliable guide for farmers. Because proportionately more sulfur than nitrogen was found in the soil matter than in the plant tissue, and because nitrogen and sulfur are mineralized in about the same ratio as they occur in soil matter, any soil that supplies adequate nitrogen for crop production probably supplies adequate sulfur.

The ratios are similar enough to suggest that soils responding significantly to nitrogen fertilizer probably need additional sulfur too. Other natural sources of sulfur — irrigation water, rainfall, sulfur salts in the soil — may supply this need; the availability of additional sulfur depends on the soil and its location.

Results of this study also explain why legumes respond to sulfur fertilization. By fixing atmospheric nitrogen in the soil, they upset the natural nitrogen-sulfur ratio.

Should Utah Reform its Justice of the Peace Courts?

J E D O N A . E M E N H I S E R

During the last few years, many states have improved the quality and efficiency of their lower court decisions by reorganizing court structure and requiring some legal training for judges.

Louisiana, Missouri, New Jersey, Ohio, and Virginia have abolished the judicial powers of their Justices of the Peace. Maryland has transferred, to a higher court, the criminal jurisdiction of Justice Courts. California now requires its Justices of the Peace either to hold a law degree or to pass a comprehensive legal examination. Connecticut has replaced its Justice Courts with 44 full-time, legally trained, traveling judges. Fifteen other states have allowed each of their own counties and municipalities to decide individually whether to abolish or to retain the Justices' Court.

As most other states have shown some concern about the structure and personnel of their lower courts, there is good reason for Utah to examine the machinery it uses at its lowest judicial level.

J E D O N A . E M E N H I S E R is an assistant professor in the Department of Political Science.

PURPOSE OF JP COURTS

The purpose of Utah's lower courts is to adjudicate minor legal conflicts between one private party and another — civil suits involving less than \$300 — and between the government and a private party — misdemeanors. Every person in Utah may be served by a lower court. The state is divided into lower court jurisdictions, and each one has either a Justice Court or a City Court. City Courts may, by law, be established in First, Second, and Third Class Cities and in county seats, while Justice Courts are in all unincorporated areas within the state, in all those cities which have not set up City Courts, and in all towns and county seats without City Courts.

In Utah the number of Justice Courts has grown independently for each county. The 29 County Commissions have created as many precincts in their respective counties as they have deemed necessary and have established a Justice Court in each precinct. The counties with the fewest Justices are Daggett and San Juan with one each. Cache county has the most with 12. Salt Lake, Utah, and Millard Counties each have 10 Justices.

JP SURVEY

A recent statewide survey, conducted by the author, among Justices of the Peace (JP's) shows the way in which most of them attained office, how long they have held office, their major occupations, the kind and number of cases they hear, their judicial equipment, and their opinions on the training and experience of JP's and the future of Justice Courts.

Ninety-four of the 133 Justices in office in 1962 answered the survey questionnaire.¹ As is indicated by figure 1, most Justices who answered the survey served unincorporated precincts, not small municipalities, and were appointed, not elected.

¹The 70.7 percent of the total number of Utah's Justices of the Peace who responded to the survey was distributed among the state's counties in the following manner. The first figure is the number who responded and the figure in parentheses is the total number of Justices in the county: Beaver 3 (3); Box Elder 3 (8); Cache 6 (12); Carbon 4 (4); Daggett 1 (1); Davis 3 (4); Duchesne 3 (4); Emery 3 (5); Garfield 2 (4); Grand 0 (2); Iron 2 (4); Juab 2 (2); Kane 2 (2); Millard 10 (10); Morgan 3 (3); Piute 2 (3); Rich 3 (4); Salt Lake 9 (10); San Juan 1 (1); Sanpete 2 (2); Sevier 1 (2); Summit 1 (5); Tooele 2 (4); Uintah 2 (2); Utah 7 (10); Wasatch 4 (5); Washington 6 (7); Wayne 2 (2); and Weber 5 (8).

54.8 % PRECINCT JUSTICES		45.2 % MUNICIPAL JUSTICES	
		21.7 CITY	23.5 % TOWN
34.8 % ELECTED	20.0 % APPOINTED	45.2 % APPOINTED	

Figure 1. Ninety-four of the 133 JP's in office in 1962 answered the survey questionnaire. Most of them served unincorporated precincts, not small municipalities, and were appointed, not elected.

By law, popular election is the chief manner of selecting Precinct Court Justices. But, since many Justices are serving unexpired terms of Justices who either have resigned from office or died in office, nearly two-thirds of those surveyed were appointed rather than elected. Almost all the appointed Precinct Justices were named by their respective County Commissions, as is provided by law, but two Justices in-

sisted they had been appointed by their respective County Sheriffs.

All the municipal Justice Court incumbents were appointed by the governing body of the respective municipality as is the legal prescription. The Third Class City JP's were appointed by their City Councils, and the Town JP's were appointed by their Town Boards. A few more Town Justices than City Justices were included in the sample.

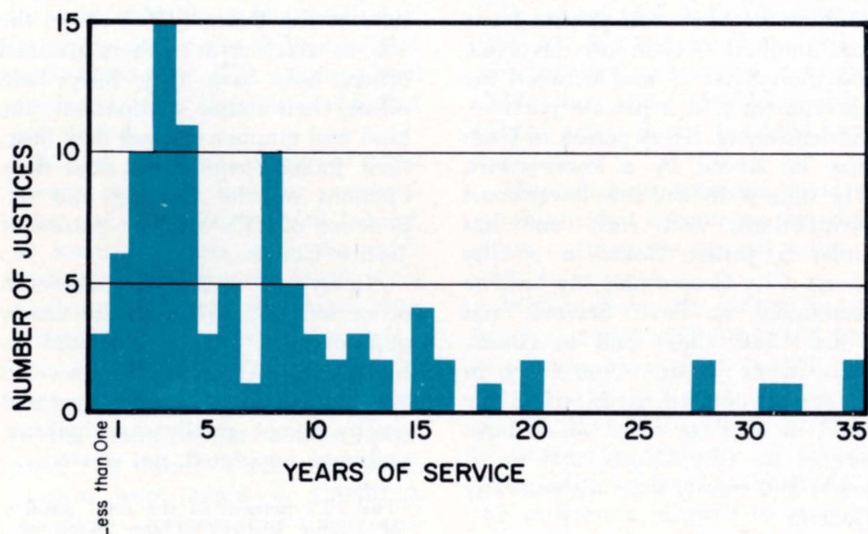


Figure 2. Tenure for JP's included in the survey ranged from 3 months to 35 years.

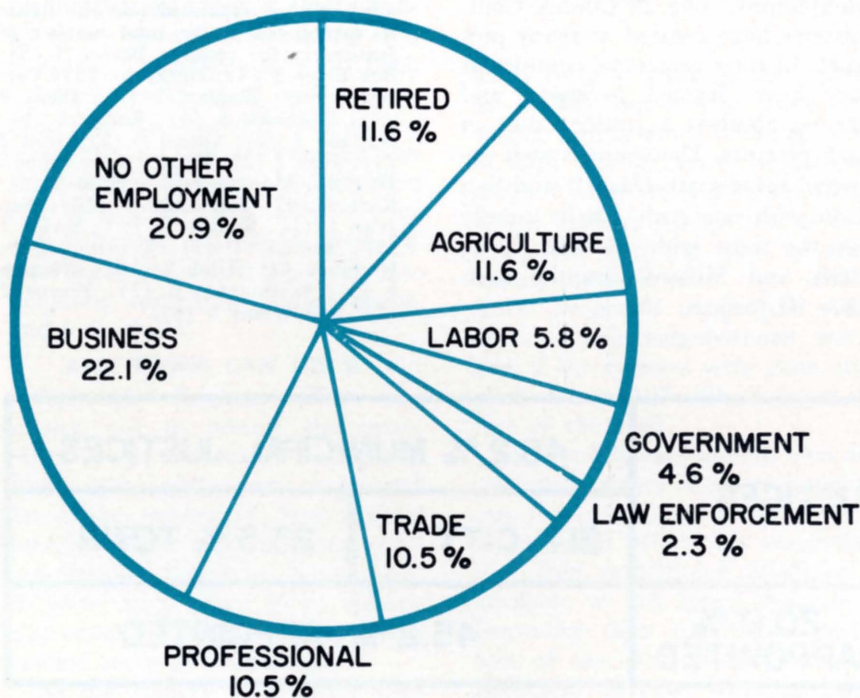


Figure 3. Approximately one-third of the JP's surveyed were either retired or considered their judicial occupation full-time work.

Those who answered the survey included more elected Precinct Justices than appointed Town Justices, more appointed Town Justices than appointed City Justices, more appointed City Justices than appointed Precinct Justices, and more Precinct Justices (both elected and appointed) than Municipal Justices (both City and Town).

DOUBLE DUTY

One of the most interesting features of the survey showed that the 94 Justices occupied 115 court positions — or 23.4 percent of the Justices in the sample presided over more than one court. In 22 instances either (1) a City or a Town governing body had appointed the same person to serve as Municipal JP who had previously been elected or appointed to serve as Precinct JP; or (2) the people of a precinct had elected or a County Commission had appointed the same person to serve as a Precinct JP who had previously been appointed to serve as a Municipal JP. City Justices engage in double duty more, and Town Justices engage in double duty less, than any other class of Justice. And more appointed Precinct JP's than elected Precinct JP's engage in double duty.

YEARS OF SERVICE

The number of Justices and their years of service are shown in figure 2. Although the range of tenure spread from 3 months to 35 years, the median length of service of the Justices in the sample was 5 years. It is interesting to note that two of the three Justices who are serving the shortest time have had professional legal training, while none of those who are serving over 20 years have had any professional training.

Many of the Justices in the sample were either retired or considered their judicial occupation full-time work. Several were engaged in business or farming, and a few were employed in some other governmental capacity in addition to the judiciary. The occupational distribution of the sample is illustrated in figure 3.

While the number of cases heard by each Justice varied from zero to

more than 4,000 per year, traffic violations were the main legal matter before the courts (figures 4 and 5).

Most justices reported holding court in their homes, and a few have set aside a room strictly for court use. Some hold court at their place of business, and others use a public or semi-public building (figure 6).

JP STANDARD WORKS

Even more important, in administering justice, than the place of holding court is the judge's legal reference material. The two standard works which form the basic legal libraries of Utah's JP's are the *Justices' Manual* and the *Utah Code Annotated 1953* with biennial pocket supplements. As essential as these works are in determining the correct procedure and proper substance of the law, many of the JP's who responded to the survey admitted they had neither. Less than two-thirds of the Justices reported having access to a complete copy of the *Utah Code*, and more than 13 percent of them had no *Manual*.

LEGAL TRAINING?

Most of the Justices, themselves not lawyers, did not feel that professional legal training was necessary, or even in one case desirable, for the position of Justice of the Peace. Most felt that they were adequately prepared with their backgrounds of "honest dealings with the public." As figure 7 illustrates, many thought that some familiarity with the law from informal reading, observation, or academic training was advisable. But most felt that the Justice Court is a "people's court" and that too much professionalism might stifle the popular spirit. Many were certain that attorneys would not want to be JP's since — although one JP reported earning more than the Governor — most JP incomes are low. And, if a person were required to have a law degree to be a JP, they were afraid the court would stand vacant, resulting in a serious inconvenience for the people.

PROS AND CONS

Only seven of the respondents recommended abolishing the JP

Court, while 87 strongly favored continuing it. Those who desired abolition believed better service for the people could be provided by City Courts or the creation of a new type county court. Those who defended the existing JP system maintained that it is mainly a convenience to tourists and that since it is "close to the people," it "keeps democracy alive." Some defended it only if it is used in the most sparsely populated areas, only if it is used for traffic violations, or only if the Justices are adequately trained and given a regular salary. Others praised its dispatch, economy, and good decisions. Some felt that the

bad features of the JP system were really the fault of local governing bodies pressing for fines, the inconsistency of arresting officers, "rubber stamp" Justices (those who find a person guilty just because he is arrested), and the lack of energetic County Attorneys.

SUBJECT TO ABUSE

As presently constituted, the Justice of the Peace Court in Utah is mainly a traffic court. It is a highly decentralized instrument for the administration of justice in the less heavily populated areas. The quality of the product depends largely upon the personal characteristics of the JP's themselves. Men and women

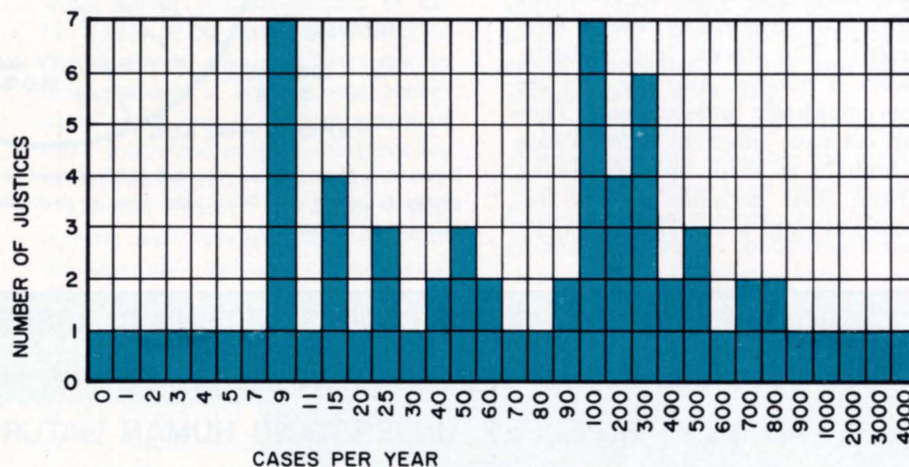


Figure 4. The number of cases heard by each justice varied from zero to more than 4,000 per year.

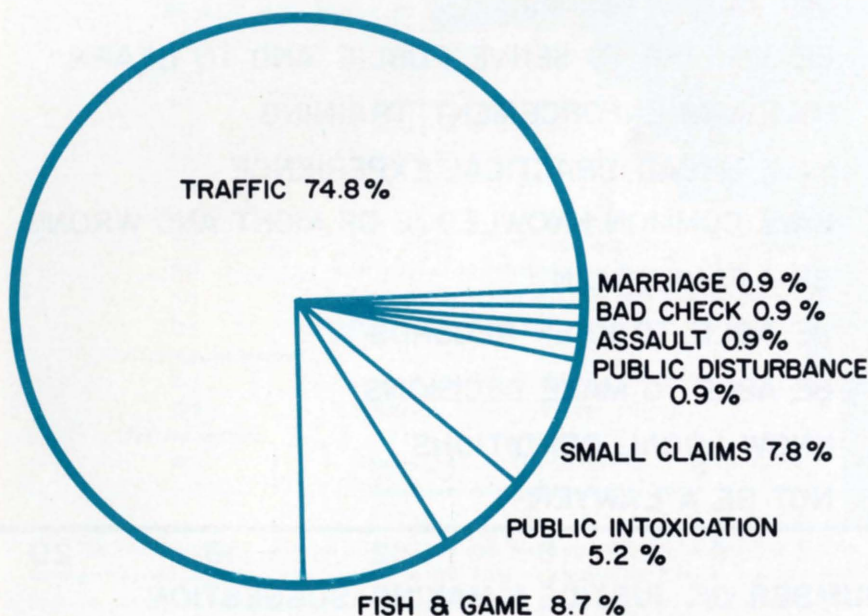


Figure 5. Traffic violations were the main legal matter before the JP courts.

dedicated to the sense of fair play and endowed with a certain amount of common sense may be able to render a just decision despite their lack of legal training or use of strict court procedures. But there is no guarantee this will occur. Particularly, when Utah JP's receive no set salary but are paid by fees levied upon those who use their courts, there is the temptation to encourage "speed traps" and engage in "fee splitting."

CHECKS AND BALANCES

Throughout most of its governmental structure the United States has attempted to protect its people from the abuses of greedy or unwise officials by certain institutional safeguards. The check and balance theory is famous. And the JP's are not completely independent. They can not pass judgment unless a case is brought to them by an arresting officer, their decisions may be appealed by right to the District Court,

and District Court judges are supposed to exercise some supervision over them. But collusion or neglect of duty can occur.

Unfortunately no mechanical device can prevent all forms of corruption. As Plato said, the best government is one made up of the best

rulers, but, since we can not always be assured of the best rulers — and the best Justices of the Peace — we prefer to adopt Plato's second best type of government — one of laws, not of men. What laws can provide

(Continued on page 128)

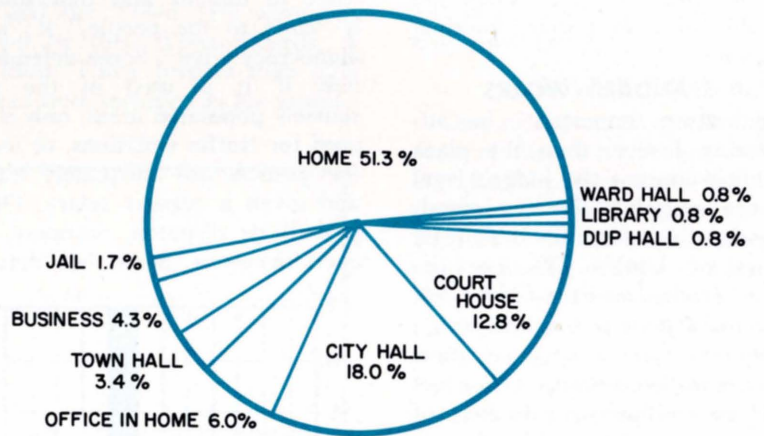


Figure 6. Most justices reported holding court in their homes. A few have set aside a room strictly for court use. Some hold court at their place of business, and others use a public or semi-public building.

READ LAW BOOKS, OBSERVE COURTS, ATTEND CLASSES

USE GOOD JUDGMENT AND COMMON SENSE, BE FAIR MINDED

GET ALONG WITH PEOPLE, UNDERSTAND HUMAN NATURE

BE HONEST AND FREE FROM PRESSURE

OBTAIN LAW DEGREE

BE WILLING TO SERVE PUBLIC AND TO LEARN

HAVE LAW ENFORCEMENT TRAINING

HAVE BROAD PRACTICAL EXPERIENCE

HAVE COMMON KNOWLEDGE OF RIGHT AND WRONG

BE A FAMILY MAN

BE ABLE TO KEEP RECORDS

BE ABLE TO MAKE DECISIONS

KNOW LOCAL CONDITIONS

NOT BE A LAWYER



Figure 7. Most Justices of the Peace felt that they were adequately prepared with their backgrounds of "honest dealings with the public." Many thought some familiarity with the law was advisable.

Does Ladino Clover have a place?

KEITH R. ALLRED

Irrigated pastures in the western part of the United States have been greatly improved during the past decade. Much of this improvement has come about through the use of better forage species and improved management practices. Selection of forage species to fit the grazing, irrigation, fertilization, and other management practices is important. Deep-rooted plants withstand longer periods between irrigations than do shallow-rooted plants. Legumes provide nitrogen for their own use as well as that of the associated grasses. Tall-growing species are generally more productive but do not withstand frequent or close grazing as well as short species. These and many more factors need to be taken into consideration by a farmer in order to select the combination of grass and legume species that will best fit his farm conditions and provide the greatest returns from his pastures.

THIRD IN SERIES

This is the third in a series of articles reporting results of a 5-year pasture study. The previous articles dealt with "the Role of Alfalfa" and "Grasses Can Be Productive" and appeared in the June and September issues, respectively, of *Utah Science*, Volume 26, 1965. This article discusses management that is necessary to maintain ladino clover in the pasture mixture in order to obtain value from its nitrogen-fixing ability as well as its productivity and high feed value.

The study was conducted at the Greenville Experimental Farm in North Logan, Utah, during 1960 to 1965 (figure 1). The soil was a

Millville silt loam. Design of the experiment and management treatments imposed on the pasture mixtures were described in detail in the first article and are, therefore, only briefly outlined here.

WHAT IS LADINO?

Ladino clover is a large form of white clover that originated in the Po Valley of Northern Italy. Due to its improved size and response to management, it has become recognized as an important component of some improved pasture mixtures for temperate regions (figure 2a).

Ladino clover is a perennial legume that spreads vigorously under favorable soil and climatic conditions (figure 2b). It spreads by means of fleshy stolons that grow out from the crown, along the surface of the ground. It develops a taproot at the crown and adventitious roots at the stolon nodes. Ladino clover is a shallow-rooted plant since the

taproot extends only a foot or two into the soil and the adventitious roots grow mainly within the plow layer.

The grazed portion of ladino clover consists mainly of leaves and flower stalks that develop from the crown or from nodes along the stolons. These parts may grow to a height of 18 to 20 inches. Ladino clover is considered a very nutritious and palatable stock food.

Although ladino clover is desirable in improved pastures, too much of it can be worse than none at all. Cattle and sheep bloat easily when grazing on pastures containing luxurious amounts of ladino clover.

Management becomes all-important in maintaining ladino clover in the stand but is even more important in maintaining the desirable ratio of legume to grass in the irrigated pasture.

MANAGEMENT TREATMENTS

Irrigation	
I-1	4 inches of water every 20 days
I-2	3 inches of water every 15 days
I-3	2 inches of water every 10 days
I-4	1 inch of water every 5 days
Fertilization	
F-1	Zero pounds of nitrogen per acre
F-2	50 pounds of nitrogen per acre
F-3	100 pounds of nitrogen per acre (50-lb. increments)
F-4	200 pounds of nitrogen per acre (50-lb. increments)
Clipping frequency	
C-1	4 times a season (35-day interval)
C-2	5 times a season (28-day interval)
Pasture mixture	
M-2	Legume-grass mixture consisting of ladino clover, orchardgrass and smooth brome grass

The plots were all sprinkler irrigated. Forage was clipped to a height of 2 inches at each harvest. Nitrogen was applied in the form of ammonium nitrate. The soil was high in potash. To assure that sufficient phosphorus was available to the plants, 100 pounds per acre of phosphate (P_2O_5) were broadcast over the entire experimental area in the springs of 1961 and 1963.

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RESPONSE TO MANAGEMENT

The pasture mixture to be discussed in this article consisted of ladino clover (*Trifolium repens* L.), commercial orchardgrass (*Dactylis glomerata* L.), and Manchac smooth brome (*Bromus inermis* Leyss.). Seeding rates in pounds per acre were: ladino clover, 1; orchardgrass, 8; and brome, 12. At the end of the establishment year (1960), plots seeded to this mixture contained 40 percent ladino clover, 45 percent orchardgrass, and 15 percent brome.

The largest forage yield obtained from this mixture was 5.1 tons the first season and the smallest was 1.97 tons of dry matter per acre the fourth season (table 1). High yields were associated with frequent irrigations and high levels of nitrogen fertilization. Dry matter production from the ladino clover-grass mixture was intermediate between the alfalfa-grass mixture and the all-grass mixture at both the high and low ranges. Comparing the dry matter produced on the highest-yielding plot of the ladino clover-grass mixture with that of the two mixtures previously reported, the ladino clover-grass mixture was 1.3 tons per acre per season less than

the alfalfa-grass mixture but was 0.7 tons more than the all-grass mixture. At the low end, the ladino clover-grass mixture produced 1.2 tons more than the all-grass mixture and was only 0.2 tons less productive than the alfalfa-grass mixture. These yield comparisons help point out the value of including a productive legume such as ladino clover or,

better still, alfalfa in a pasture mixture for irrigated land.

EFFECT OF CLIPPING FREQUENCY

Ladino clover is much less sensitive to frequent clipping or grazing than alfalfa. During 2 of the 4 years there was no difference in yield when the ladino clover-grass mixture was harvested four times (C-1) as compared to five times (C-2). The

Table 1. Dry matter production for the ladino clover-grass mixture (M-2) as influenced by nitrogen fertilization and irrigation frequency when harvested four times a season (C-1) for four seasons

Nitrogen fertilization		Irrigation frequency		1961	1962	1963	1964	Average
				Tons per acre				
F-1	zero-N	I-1	20-day	2.41	3.24	2.60	1.97	2.56
		I-2	15-day	3.35	3.71	3.59	3.10	3.44
		I-3	10-day	3.53	4.10	3.92	2.48	3.51
		I-4	5-day	3.93	3.85	2.97	2.19	3.24
F-2	50-N	I-1	20-day	2.67	3.29	2.92	2.59	2.87
		I-2	15-day	3.52	3.80	3.46	2.91	3.42
		I-3	10-day	3.71	4.25	4.22	3.24	3.86
		I-4	5-day	4.70	4.26	3.87	3.10	3.98
F-3	100-N	I-1	20-day	3.23	3.45	3.19	2.69	3.14
		I-2	15-day	3.56	3.62	3.31	2.99	3.37
		I-3	10-day	3.59	4.31	4.24	3.45	3.90
		I-4	5-day	4.57	4.33	3.91	3.10	3.98
F-4	200-N	I-1	20-day	4.00	3.82	3.65	4.01	3.87
		I-2	15-day	4.65	4.12	3.73	4.13	4.16
		I-3	10-day	4.36	4.93	4.70	4.17	4.54
		I-4	5-day	5.10	4.85	4.48	4.56	4.75



Figure 1. View of a portion of the experimental pasture area. The author is kneeling in a ladino clover-grass plot (M-2). Mixtures containing alfalfa-grass (M-3), birdsfoot trefoil-grass (M-4), and all-grass (M-6) can also be seen in this portion of the experimental area.

average for the 4 years was only 0.12 tons of dry matter more for the C-1 treatment. This would indicate that a pasture mixture composed mostly of ladino clover and grass could be harvested at relatively frequent intervals without too much sacrifice in dry matter production. Harvesting at 28-day intervals favored the ladino clover and contributed to the larger amount retained in the mixture. Severe shading of ladino by the associated tall grass is known to result in loss of stand. Therefore, the more mature the grass is allowed to get beyond the flower stage the greater the shading effect it will have on ladino clover.

Forage harvested from the ladino clover-grass mixture was all of high quality. There was very little difference in the average protein content of the forage for each of the four years. However, there was a significant difference in the percent protein of the forage from the two clipping treatments. Forage harvested four times a season averaged 16.6 percent while that harvested five times a season averaged 19.2 percent protein. Their protein percentages are more than 2 percent higher than the respective values for the all-grass mixture. This points out another reason for including a high-quality legume in the pasture mixture.

EFFECT OF NITROGEN

When nitrogen fertilizer is applied to a pasture sward containing both grasses and legumes, the grass component of the mixture receives a greater benefit than the legume. At the higher rates of nitrogen fertilization the grass may become stimulated to the extent that, after one or two seasons, it will be very competitive and result in a decrease in the legume composition of the pasture.

Total dry matter yields for the ladino clover-grass mixture under different irrigation frequencies and nitrogen fertilization treatments are presented in table 1. The largest yields were obtained at the high rates of nitrogen fertilization. Plots receiving 200 pounds of nitrogen per acre per season averaged between 3.87 and 4.75 tons of dry matter per

acre over the 4-year period. The ladino clover-grass mixture did not show as great a response to the different levels of nitrogen as the all-grass mixture. This was because ladino clover fixed a fair amount of nitrogen from the air and maintained higher forage production in the pasture mixture on plots that were unfertilized or that received a low level of nitrogen fertilization.

Response of the legume and grass components of the ladino clover-grass mixture to four levels of nitrogen fertilization at two irrigation frequencies when harvested four times a season is shown in figure 3.

The first harvest year (1961) ladino clover accounted for approximately 40 percent of the forage produced by the mixture. The spring of 1962 was cool and moist. It was almost ideal for the growth of ladino clover. The percent ladino increased in all plots except those that were fertilized with the high rate of nitrogen. Ladino clover accounted for from 60 to 70 percent of the forage produced on the unfertilized plots the second year. As the rate of nitrogen applied was increased, the forage yield of the plots increased but the percent of ladino clover in the pasture decreased.

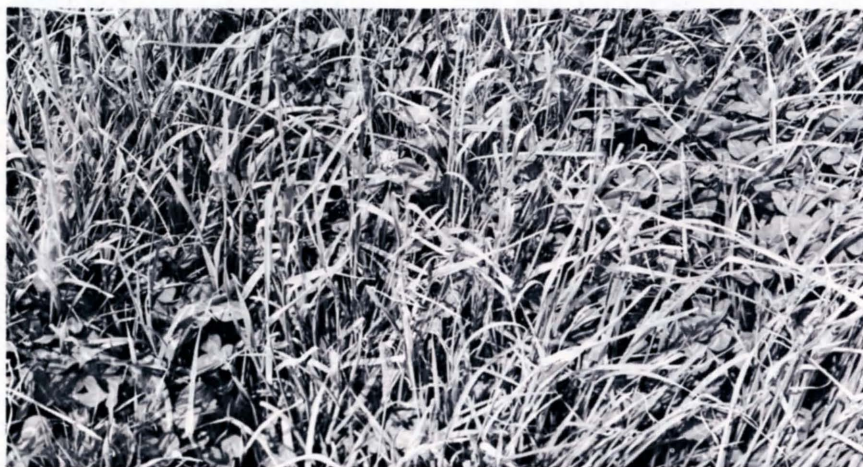


Figure 2a. Close-up of a ladino clover-grass pasture plot approaching the harvest stage. This mixture should be grazed about the time the grass starts to flower. If allowed to become too mature the grasses will shade the ladino clover and reduce its effectiveness in the pasture.



Figure 2b. Under ideal conditions ladino clover is a prolific spreader. This plot was irrigated every 5 days, clipped at 28-day intervals, and received no nitrogen fertilization. It contained 70 percent clover and 30 percent grass. This pasture would provide a definite bloat hazard to grazing animals. Delaying grazing 7-10 days beyond this stage would allow the grass to mature to the flower stage and would lessen the danger of bloat but would not eliminate it.

The amount of ladino clover decreased in all plots during the third and fourth years of the experiment. The large decrease between the third and fourth years was due largely to mouse damage. There was a heavy snowfall during the 1963-64 winter. Snow that fell in December stayed on the ground until about the 10th of May and was added to by additional storms. A large mouse population invaded the experimental area and went undetected under the 12 to 16 inches of snow. Since the ground was frozen prior to the first snow, the mice fed primarily on parts of the forage plants at the surface of the ground. The ladino clover stolons made ideal food and were practically all devoured. This resulted in a drastic reduction of ladino clover the following spring. Despite this damage the amount of ladino clover in the different plots still reflected the influence of the previous levels of nitrogen fertilization.

INFLUENCE OF IRRIGATION FREQUENCY

Shallow-rooted plants like ladino clover and forage grasses require frequent irrigations in order to maintain top performance.

The manner in which the frequency of irrigation affected dry matter production from the ladino clover-grass mixture can be seen from the data presented in table 1. Although the results are not quite as striking as for nitrogen fertilization it is evident that frequent applications of water are necessary for top production from this pasture mixture. Irrigating at 5- or 10-day intervals resulted in nearly 1 ton more dry matter per acre per year than irrigating every 20 days even though a total of 24 inches of water was applied by each treatment per season.

By comparing the upper with the lower portion of figure 3, it is possible to see the advantage of frequent applications of water, both from the standpoint of total forage produced and the amount of ladino clover retained in the pasture mixture. Data shown in the upper portion were obtained from plots

irrigated with 4 inches of water at 20-day intervals (I-1), while those in the lower portion were obtained from plots irrigated with 1 inch of water at 5-day intervals (I-4). Both the ladino clover and the grass components of the mixture benefited from the more frequent applications of water. Even following the mouse damage during the winter of 1963-64, plots irrigated at frequent intervals contained twice as much ladino clover during the fourth harvest year as those irrigated every 20 days.

PLACE FOR LADINO CLOVER

Ladino clover is a productive and nutritious forage legume when given the proper care and grown under the proper conditions. However, it is not as dependable as taller-growing legumes, such as alfalfa, over a wide range of soil and climatic conditions. It requires good moisture, high fertility and freedom from excess shading. It can be strong in a pasture one year, practically disappear the next, and then reappear the following year, all depending on how

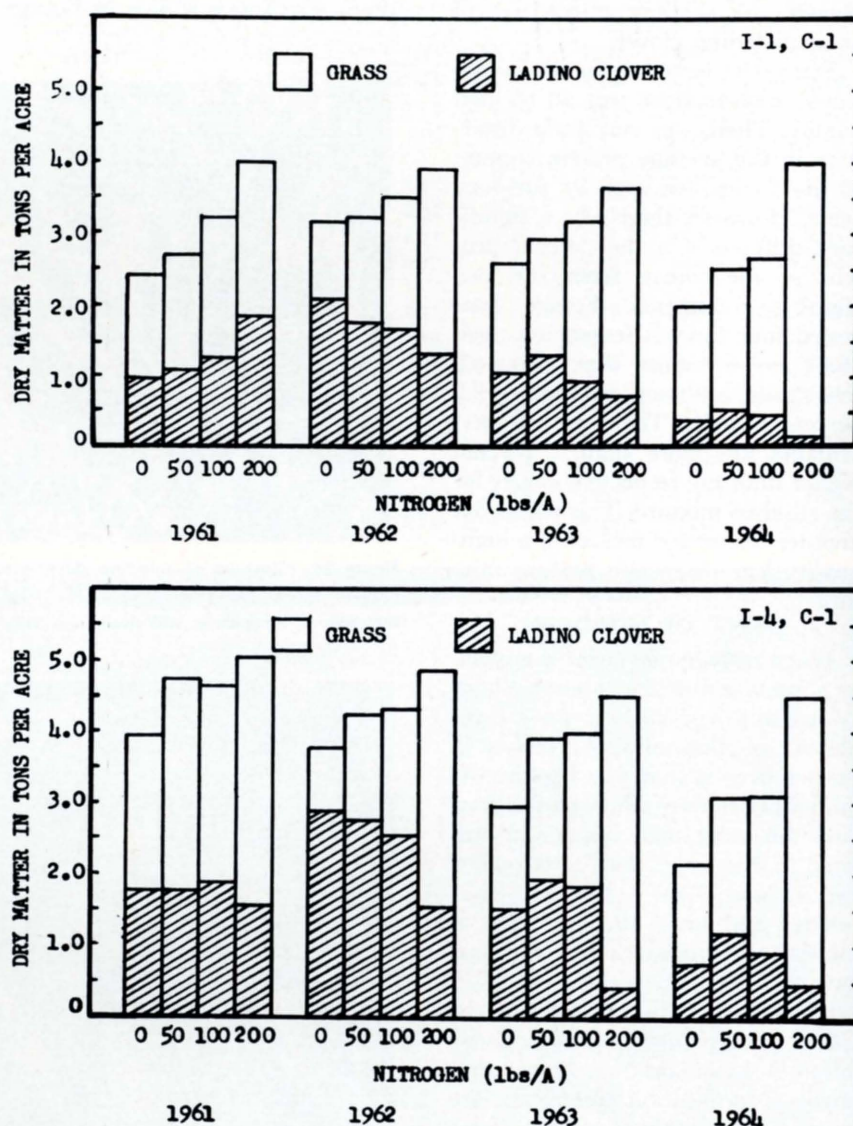


Figure 3. Dry matter production at four levels of nitrogen fertilization is shown for both the grass and legume components of the ladino clover-grass pasture mixture (M-2) when harvested four times a season (C-1) for four years. Upper graph contains data showing mixture response at 20-day irrigation intervals (I-1), while the lower graph shows the response at 5-day irrigation intervals (I-4).

RECOMMENDATIONS

Irrigated pastures generally contain at least one grass and one legume but frequently involve more than one species of each. When the mixture contains two or more legumes it is advisable to manage for optimum production from the most important legume. The following recommendations are made on the premise that ladino clover is considered one of the two most important legumes in the mixture.

- Plant ladino clover as the main legume with adapted grasses for pastures on non-saline cultivated land that is moist throughout the growing season.
- Include ladino clover in mixtures containing other improved legumes and grasses on good cultivated land where irrigation water is available throughout the summer.
- Use 1 pound of ladino clover seed in the mixture per acre. Seldom will it be advisable to include more than 2 pounds per acre regardless of the situation.
- Plant shallow, not to exceed $\frac{1}{2}$ inch. Ladino clover seed is very small and a pound contains approximately 800,000 seeds.
- Irrigate at 10-day intervals, or more frequently if practical, and apply approximately 2 inches of water per irrigation.
- Use a rotational or strip grazing system that will provide a 28-day minimum recovery period between grazings.
- Maintain the soil at a high level of fertility and give special attention to supplying adequate phosphorus. A 50-pound application of nitrogen per acre in the spring or following the first grazing will increase grass forage production without causing undue damage to the ladino clover.

favorable the environment is at a particular time.

In answer to the questions "Does ladino clover have a place in irrigated pastures?" I would have to say, "Yes, it does." It adds to the productivity of pastures that are seeded on good cropland where water is available for frequent irrigations throughout the growing season. Ladino clover makes an ideal companion with orchardgrass or with orchardgrass and alfalfa because it spreads by growth of the stolons and fills in between these nonspreading plants. It also is well adapted to non-saline land that has a relatively high water table and remains moist much of the pasture season.

Ladino clover should not be sown on salty land, on low-fertility soils, on light-textured soils, in pastures where there is a long interval between irrigation turns, or where water becomes limiting to crop production for any appreciable time during part of the growing season. Under these conditions, ladino clover is unproductive or disappears entirely from the pasture.

When ladino clover is the only legume in the pasture it should be controlled so that it doesn't make up more than about 50 percent of the forage produced. Otherwise, it will create a serious bloat hazard. When

it is included with other legumes like alfalfa the total legume contribution of the pasture should be limited to not more than 60 percent of the forage yield. The plants should not be grazed when they are young, during a drouth, or following a frost because of the greater tendency for bloat under these conditions.

New Publications

Bulletin 454. Rabbitbrush competition and control on Utah rangelands, by C. Wayne Cook, Paul D. Leonard and Charles D. Bonham. Department of Range Management.

The authors describe the rate and date of application effects of herbicides on big and little rabbitbrush which infest depleted foothill areas and seeded rangelands. The study began in 1959 and ended in 1964.

Bulletin 455. Plant and livestock responses to fertilized rangelands, by C. Wayne Cook. Department of Range Management.

Dr. Cook describes a series of studies started in 1957 to determine how commercial fertilizers might be used as a management tool for increasing yield and quality of forage on Utah ranges.

Bulletin 456. Post-high-school choices of young people, by Thel R. Black. Department of Sociology, Social Work and Anthropology.

After high school graduation, young people are forced to choose from various alternatives of action such as seeking a job, enrolling in college or trade school, serving in military service, or going on a church mission. Dr. Black analyzes the choices made by three graduating classes (1950, 1955, 1960) of high schools in Sevier Basin and Box Elder County.

Bulletin 457. Age and sex population projections of Utah counties, by Thel R. Black and James D. Tarver. Department of Sociology, Social Work and Anthropology.

In making plans for the future of Utah, the size and composition of the future population are important elements to consider. The authors discuss and list six series of population projections, up to 1980, for all 29 Utah counties.

Utah Resources Series 27. Soil interpretation for planning in Davis County, by LeMoyné Wilson and H. B. Peterson. Department of Soils and Meteorology.

Considerable urban and industrial development is taking place in Davis County. Competition for the most suitable lands is now developing. For best land use, plans should be developed. The authors interpret previous soil surveys as to the suitability of the various soils in Davis County for agricultural uses, low building foundations, septic tanks, drainage fields, and special uses.

Grapefruit Crystals Make Instant Juice

Grapefruit crystals that dissolve readily in cold water to make a good-tasting, nutritious grapefruit juice is another new convenience food that should appeal to consumers.

The product is lightweight and needs no refrigeration — advantages that should make it attractive for export as well as for domestic use.

The process for making the crystals was developed by USDA and Florida scientists.

The crystals are made from commercial frozen grapefruit concentrate. A very small amount of a food additive, methyl cellulose, is added to the concentrate so it can be whipped into a stiff, stable foam. The foam is laid down as a smooth sheet onto a perforated tray, and air blasts are used to perforate the foam layer. The trays of foam are then stacked in a drying oven, where moisture is removed by streams of hot air passing through the perforations. The dried foam is then ground into tiny crystals, which pack together to take little storage space.

UTAH'S

Problems and

Lois M. Cox

In public affairs, a period of aimless drifting with unacknowledged issues and indeterminate goals, may take years to rectify. Utah governing officials recently activated a progressive program that they hope will keep the state out of the quicksand of such an unplanned future.

The 1965 Utah Legislature instructed its bipartisan Legislative Council, chaired by Speaker Kay Allen, to find a way to define valid, long range policy goals for Utah. The five senators, five representatives, and three citizen members of the Council asked the Planning and Agencies Subcommittee to direct the search for goals.

The Planning and Agencies Subcommittee, headed by Representative Gunn McKay, designated eight areas for special attention by individual subcommittees: Human Rights, Education, Social Services, Cultural Activities, Natural Resources, Transportation and Regulation, Economic Development, and Government Structure. News media of the state were asked to cooperate in publicizing the search for goals. The Division of Continuing Education at the University of Utah assumed many of the program's organizational chores. The Economic Research Institute of Utah State University arranged and participated in a series of eight, one-half day seminars that helped pinpoint relevant issues.



**HUMAN RIGHTS
SOCIAL SERVICES
EDUCATION
CULTURAL ACTIVITIES**

FUTURE

Potentials

LOIS M. COX is the technical writer for the
Division of Research.

Following these August seminars, each of the eight subcommittees held additional meetings to promote data gathering and to develop a statement of possible goals in their areas. Since late September, portions of these statements have been appearing in some of Utah's newspapers. Special television programs, plus formal and informal citizens' discussion groups, have also been facilitating the state's search for authentic goals.

To help generate widespread public discussion of the issues, this article presents some of the more provocative questions that have been asked. It also mentions other points that might be worth considering as Utah defines her long range goals. Public discussions serve only part of their purpose, however, if the conclusions drawn do not reach those who are making the decisions. Individuals and groups that want to take part in formulating Utah's goals for the future can send their conclusions to: Goals for Utah, P. O. Box 200, Salt Lake City, Utah 84110.

The lengths of the various sections in this article are not indicative of any arbitrary evaluation of their relative importance. Each presentation simply reflects the public discussion to date.

**NATURAL RESOURCES
GOVERNMENT STRUCTURE
ECONOMIC DEVELOPMENT
TRANSPORTATION AND REGULATION**

Human Rights

"No one is discriminated against in *this* community."

"Human rights? We have no rights problems here."

"Minority groups in this state can't possibly have any valid complaints about their treatment."

Too often in the past such remarks have characterized members of various majority groups. Never having had any of their rights threatened, they see little need for concern. But in today's world, no one can safely turn his back while some one else is robbed of a human right.

WHOSE RESPONSIBILITY?

When we condone (whether by participation, or silence, or disregard of the facts) someone's debasement as a human being, we open the door to similar treatment of ourselves. The negation of any human right (freedom to strive for self fulfillment; freedom to choose an occupation, housing conditions, and social activities; equal protection before the law; access to educational opportunities, etc.) for even one person constitutes a partial degradation of mankind. Each of us should defend the rights of others as vigorously as we proclaim our own.

In the field of human rights, legislation can be useful, as recent federal actions have demonstrated. The true effectiveness of any legislation, however, depends upon its advocacy and willing acceptance by the people involved. Ideally, the initiative should stay with the individual and his local community, moving to the state or federal level only as a last resort.

AREAS OF CONCERN

In the Goals for Utah program, it was necessary to limit consideration

Figure 1. Communities, as well as individuals, need an upward reach. Realistic goals in these 10 areas, if reached, could guarantee the human rights of every citizen in the community and provide the opportunities for individual fulfillment.

to only a few specific human rights problems. Those chosen included: discrimination in housing, discrimination in employment opportunities, rights of children, and rights to effective, equitable protection under the law.

HOUSING

Both federal and state governments have legislated against discrimination on the basis of race. Of itself, however, such legislation is no panacea. This has been attested to by incidents around the nation.

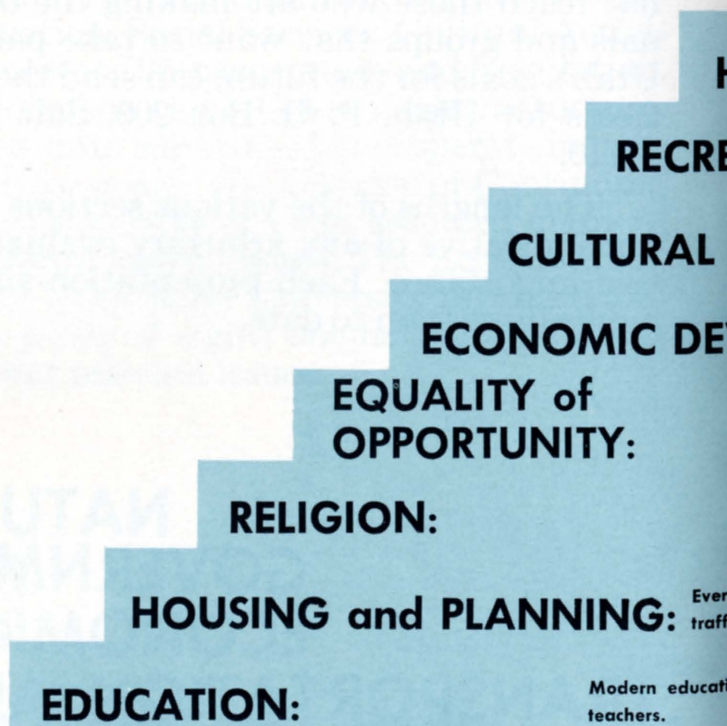
Only in its implementation at the local level can legislation accomplish the intended end. The solution to discrimination, whatever its form, rests with the individual citizen.

"In" group and "out" group antagonisms flourish when people whose only apparent bond is a common racial origin are crowded together in a limited area of a city. The normal human reaction is to resent being consigned to the "have nots" for no valid reason.

Do such conditions exist in Utah? Facts indicate that they do. The numbers of people involved are still relatively small, but this does not lessen the legitimacy of their griev-

Today, this simple fact — the community is its people — is not easy to grasp. An individual's responsibility gets lost in the maze of laws, politics, bureaus, and pressure groups.

But — all a town really ever is, is people. Men and women must guide churches, hospitals, and libraries. They must see that children are educated. People must run the government. Only when its citizens take these steps, does democracy prevail in a town.



ances. Housing is one of the most urgent concerns.

Is the refusal to sell a house to a member of a minority group justifiable? In many cases the answer is *no* on a rational basis.

What should be done (by the state, by individuals) to help qualified members of minority groups move into decent housing, where they can raise their children under pleasant conditions?

For one thing, people can be made aware that while real estate values may drop initially as a neighborhood becomes truly Americanized, there is nearly always a subsequent return to realistic levels. The initial artificial decline cannot

endure unless myopic panic preempts reason. The important thing is to be sure that those seeking to buy a home (whatever the neighborhood) have adequate income to maintain it in good condition.

FAIR HOUSING LAWS

The state could pass and implement Fair Housing legislation. It can also pass and enforce a bill that would prohibit the soliciting (for sale or lease) of residential property on the grounds of loss in value due to the entry into the neighborhood of a person of any particular race, color, religion, or national origin. This is the process commonly known as "block-busting." Legislation could also be passed and enforced to pro-

tect any owner of residential property who chooses to sell to such a person.

A Human Rights Commission on Housing could be established to help property owners sell or rent to members of minority groups. Such a Commission might also work at overcoming baseless prejudice through educational campaigns. Prejudice in some form afflicts all of us to some degree. But we do *not* have to be slaves to these destructive emotions. We can be taught to recognize and offset their effects.

EMPLOYMENT

Available data show that overall living costs in Utah are not appreciably (if at all) lower than in most

COMMUNITY ORGANIZATION:

GOVERNMENT:

HEALTH and WELFARE:

ATION:

OPPORTUNITIES:

ELOPMENT:

An organization — community forum, citizens' council, or community federation — representative of entire town, is working for advancement of the whole community. Citizens have opportunity to learn about and take part in local affairs. There is an organized, community-wide discussion program. Specialized organizations give vigorous attention to each important civic need.

Capable citizens seek public office. Officials concerned above all with community betterment. Controversy stems from honest differences of opinion, not from squabbles over privilege.

Positive approach to improving health of entire community. Medical care and hospitalization readily available. Provision made for underprivileged children, the aged, and the handicapped. Families in trouble can secure needed assistance.

Enough supervised playgrounds and facilities for outdoor activities. Full opportunity to take part in arts and crafts, photography, and other hobbies.

Citizens' lives strengthened by ample occasion to enjoy music, art, and dramatics. A professionally administered library service benefits people of all ages. Newspapers and radio carefully review community affairs.

Good jobs available. Labor, industry, agriculture, and government work together to insure sound economic growth.

People of different races, religions, and nationalities have full chance for employment and for taking part in community life. Dangerous tensions kept at minimum by avoidance of discrimination and injustices.

Full opportunity for religious expression accorded to every individual. Churches strong and well supported.

Family decently housed. Continuous planning for improvement of residential areas, parks, highways, and other community essentials. Parking, and transportation problems under control.

Available for every child, youth, and adult. Uncrowded, properly equipped schools in good physical condition. Highly qualified, well paid

other areas of the country. Yet prevailing wage rates seem to imply that living is cheap in Utah. More realistic wage rates, as well as broadened employment opportunities would be worth while goals for Utah.

Wage rate discrimination seems to affect women in Utah far more than men, and minority groups far more than majority groups. The legislature could pass and implement a uniform state-wide minimum wage law covering men and women. This would eliminate many of the present inequities. An equal-pay for equal-work bill could eliminate even more.

Are individuals belonging to certain "groups" inherently incapable of performing highly skilled or intellectually demanding work? Time and again this idea has been proven untrue. Performance depends upon the individual's education, motivation and opportunity — not his race.

The state's government, industries, and universities could help dispel this false contention by actively recruiting trained members of minority groups for professional and semi-professional positions. Individuals who realize the inaccuracies of generalizations about capabilities of "groups," could make it a point to

promote the education, training, and subsequent employment of minority peoples.

CHILDREN

The problem of "battered" children, children physically abused by their parents, is apparently becoming more common. The 1965 Utah Legislature enacted a bill requiring that people who know of such cases report them to the local police or county sheriff. This bill protects those making such reports from court action by an accused parent. In October, the Utah Welfare Commission was made responsible for organizing a program to carry out the bill's intent. The state might now consider the advisability of taking legislative action to permanently remove an abused child from his home.

Is the state responsible for meeting the intangible as well as tangible needs of children of all ages whose parents neglect, abuse, or simply cannot care for them? Should mental health become a concern of elementary school personnel? Can counseling by trained people help young children avoid later psychological difficulties?

We can no longer be prodigal with human resources. The produc-

tivity and creative potential of each human being must be developed to its maximum if man and his culture are to survive. Our unmet needs in education, scientific research, social welfare, medical care, and the arts demand the utmost from every individual.

The process of self development must be started in the child if it is to reach maximum effectiveness. How much responsibility should the state assume in this area? How much responsibility lays with individual segments of our affluent society?

PROTECTION UNDER LAW

Most police departments in Utah advertise for officers and list the necessary educational qualification as high school training or equivalent. This reflects a realistic attitude towards the salaries that we pay our law enforcement officers. But it often does not attract large groups of applicants. Many Utah communities need more police officers than they now have. Too, the job of being a police officer needs to be upgraded in the eyes of the public. To attain these goals, Utah must act on several fronts simultaneously.

Better preparation and training could be provided either through a police academy or through special classes in our colleges or universities. Part of this program could incorporate a screening of applicants on bases such as previous education, motivation for seeking to be in police work, and attitudes towards those who break laws. Better salary scales will require enlightened action at the local level. Better understanding by the public of what constitutes good police protection and what this should be worth to them requires an intensive educational campaign. Perhaps this should include special, mandatory courses for high school students.

We lack adequate facilities for segregating criminal offenders on the basis of the seriousness of their crime. Segregation is essential if we want to eliminate contact between habitual criminals and those who have committed their first relatively

(Continued on page 113)



Figure 2. A child's right to develop, free from the threat of physical and mental torment, cannot validly be doled out on the basis of religion, race, or economic status. A battered child is an especially poignant instance of a denial of human rights.

Social Services

It is too late for us to anticipate and forestall today's social crises. At best, we can alleviate some of their effects. But we still have a chance to create a more enlightened tomorrow.

We will soon have lost that chance too, however, if the current situation continues unaltered. Around the nation, we must do more than just "put out fires." We have to

find ways to foresee and prevent pending social eruptions.

Towards this end, Utah's officials are attempting to set long range goals for social services in this state. No matter how carefully conceived, however, their plans will be only semi-effective unless they are assured of continuity. Such assurance, in the final analysis, depends upon the informed support of Utah citizens.

NOT A PREMEDITATED "SIN"

Somehow, each of us must learn to take a rational rather than emotional approach to social problems. Malfunctioning individuals are symptomatic of social and economic situations that have been less than optimum for the development of their characters. They did not deliberately choose to be malfunctioning in order to annoy their contemporaries.

Particularly in recent times, science and technology have drastically altered the circumstances of life in the United States. Most people have been able to adapt at least superficially to these dynamic conditions. Those who have not, constitute "problems" for those who have.

In this light it is hardly reasonable to condemn as malingerers *all* those who need help. Most people overwhelmed by circumstances beyond their control are more likely to learn to cope with these circumstances if they are taught rather than perfunctorily censured.

URGENT QUESTIONS

Since social ills are not simple conditions, simple remedies will not suffice. This means that both questions and answers about social service activities tend to be discouragingly complex.

In looking to the future, however, Utah's officials must find ways to frame meaningful questions. The social service questions that have already been raised in connection with the Goals for Utah program include:

How can we eliminate the present multiplicity and overlapping of state social service agencies?

What can be done to help young people meet their needs and adjust to society before they become part of the modern "social problem?"

Are Utah's pay scales for highly trained, competent social workers realistic?

IMPROVING STATEWIDE EFFICIENCY

The establishment of a single "head office" would be an admirable first step towards improved efficiency. This office could involve either one specifically qualified individual, or a 3- to 5-man group of trained people. The duties of the office would initially include at least the following:

1. Ascertain the overall state situation and coordinate the various existing services and agencies. Initiate directives to achieve an optimum balance between prevention and treatment services.

HUMAN RIGHTS

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minor crime. Rehabilitation potentials can be enhanced by such segregation. Utah might do well to take the initiative in exploring ways to promote interstate cooperation in financing such institutions.

Is it true that indigent people are denied legal counsel because they can't afford it? Actually, the destitute individual is as likely to have adequate counsel as is someone in the middle or low income brackets. A more relevant question may well be — are the wealthy entitled to make practically unlimited appeals, just because they can afford to pay for them? Realistic limits to the bases for appeals could do much to offset what now appears to be unfairness to indigent or less than wealthy individuals.

The gradual erosion or abrupt termination of any human right of any citizen of Utah affects all her citizens. We can do no less than set state goals that reflect our estimation of the worth of an individual life.

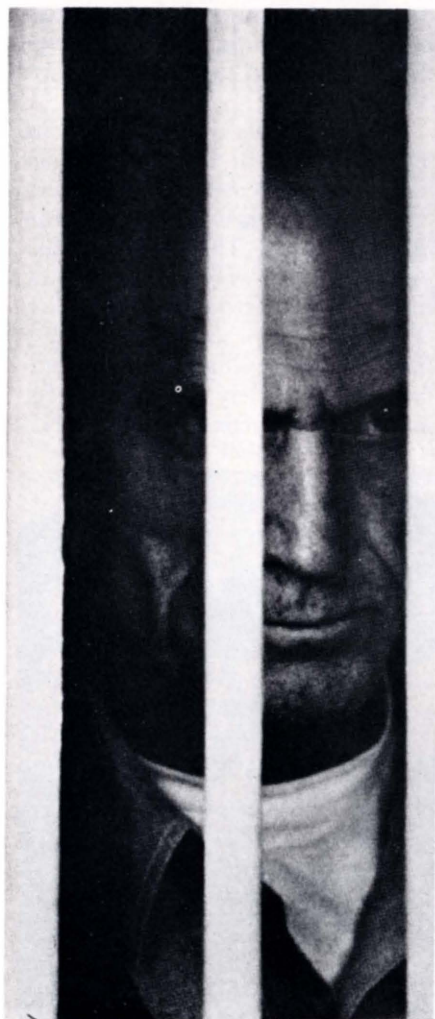


Figure 1. Malfunctioning individuals — delinquents and criminals — are symptomatic of our social and economic defects. How to stem the tide of individuals who look at life through bars is a problem facing Utah as well as the rest of the nation. To solve it should be one of our goals.

2. Organize a research unit that would:

a. Keep aware of current programs elsewhere and pertinent research findings, and their relation to Utah's problems.

b. Do necessary direct primary research or have it done by personnel of the state's universities.

3. Activate an effective public relations program. One prime aim of such a program should be to help Utah's tax paying citizens understand why social services for the state's needy are indispensable to their *own* welfare. Another aim should be to inform the public about what social services are available in Utah and how they can be obtained.

4. Appoint a fiscal officer(s) to evaluate agency budget requests, and keep up-to-date about available federal grant programs.

5. Work cooperatively with Utah's universities to develop an effective training program for prospective social service employees. In this connection, the current merit system should be reviewed and recommendations made for any advisable modifications.

ADDITIONAL LEGISLATIVE POSSIBILITIES

The recommendations made in 1964 by the Legislative Council's subcommittee on juvenile delinquency could be profitably reviewed and acted upon. If we want to lessen tomorrow's social service needs, the bulk of today's actions should be directed towards the needs of young people. The 1964 recommendations still appear to be generally pertinent and deserving of implementation. They include:

1: The Legislature should fund acutely needed investigations such as one to check the adequacy and utility of the current record system.

2. The Legislature should discover why various counties have not provided the detention facilities required by law, and work to correct these lacks.

3. The Legislature should appropriate funds to the Department of Public Instruction specifically to make recommendations on:

a. Behavioral science courses

to be included in revised teacher certification and re-certification requirements

b. Curricula appropriate to slow learners (IQ 75-90) including vocational courses

c. Curricula appropriate to marriage and family life education at various grade levels to be required at those grade levels and for graduation.

4. The Legislature should appropriate pilot funds to the Department of Public Welfare to encourage private operation of child-care nursery centers. Funds should cover half of the costs per child not on welfare and full costs for children of welfare recipients who wish to take training or seek employment. Health Services should be provided by public authority; curriculum should be supervised by school personnel; standards should be prescribed by the Department of Public Welfare.

5. The Legislature should appropriate pilot funds to school districts in culturally deprived areas to enrich elementary school programs. The funds could cover such things as:

a. Summer pay for education of teachers in child needs

b. Provision of adequate counseling, medical, and social work services

c. Employment of part-time community coordinators to enlist the efforts of each community in its own behalf; to recruit and organize volunteer workers; to identify problem families and seek help for them.

6. The Legislature should provide funds to the Juvenile Courts to allow increases in staff salaries to levels which will hold competent professionals; increase the probation staff to allow recommended case load standards; provide for one group-therapy center in each juvenile court district.

Whatever goals Utah sets for social services, they will remain meaningless unless implemented. Implementation almost inevitably will mean increased taxes. Thus it is the tax-paying citizens who will decide the stature of tomorrow's society. Each of us must accept some responsibility for determining what degree of compassion our society should have for individuals overcome by adversity.



Figure 2. Most people, especially children, who are momentarily overwhelmed by circumstances beyond their control can usually be taught how to cope with their problems.

EDUCATION

More parents are constantly demanding better education for more children. More industries are constantly seeking more highly trained personnel. Education is continually cited as our most potent weapon against perpetuated poverty. The educational system of every state in the union is straining to find ways to meet these demands efficiently.

Utah is no exception. Virtually every question raised about the state's educational system is crucial — every problem is urgent. Blind haste must be avoided, yet speed of action is mandatory.

The changing times have generated the need for at least one shift in educational philosophy in virtually all states. Today, intellectual flexibility is essential to an individual's success — indeed, to his survival. Such flexibility hinges more upon knowing how to reason than on memorizing vast numbers of facts.

A basic question that must be answered soon throughout the nation is: Should professional educators assume the responsibility for teaching the public what is now needed in education? The goals for education in Utah might profitably include: (1) increasing the emphasis on teaching students at all levels *how* to reason, *how* to learn, *how* to adapt to new situations; and (2) helping the parents understand *why* this is necessary.

ORGANIZATIONAL POLICY

Each state in the United States has traditionally had control of its own system of education. In the past, this control has been exercised primarily by local committees and boards. Recently, however, education-related problems have been proliferating so wildly both in scope and number that many of them can not be solved by purely local action. A logical goal for Utah could be the creation of an Education Policy Commission.

The members of such a commission would be charged with considering the statewide picture and making recommendations for action to the appropriate units within the state. Appointments to the commission should be on a rotating basis to guarantee continuity. Membership might be partly or wholly voluntary or appointive. In either case, qualifications for membership should be carefully detailed to assure professional competence as well as imaginative interest. Problems of education in the state are not likely to be solved satisfactorily so long as we cling to a localized orientation.

Creation of an overall policy board and strengthening of the existing state offices of education would help assure an increasingly

professional approach to increasingly complex problems.

SCHOOL CONSOLIDATION

Another major organizational question in Utah is: Should there be additional consolidation within and among school districts relevant to their property tax bases?

Efficiency virtually demands such additional consolidation. To facilitate this, the 1965 Legislative Council could authorize a definitive study of the specific factors involved. The next legislature could then use the accumulated data as a basis for establishing more effective alignments. The State Department of Public Instruction could undoubtedly provide considerable help to whatever agency was designated to do the study.

Overall, Utah is among the most progressive states in terms of consolidating towards more efficiency, but optimum conditions are yet to be achieved. Moves toward additional consolidation might well be

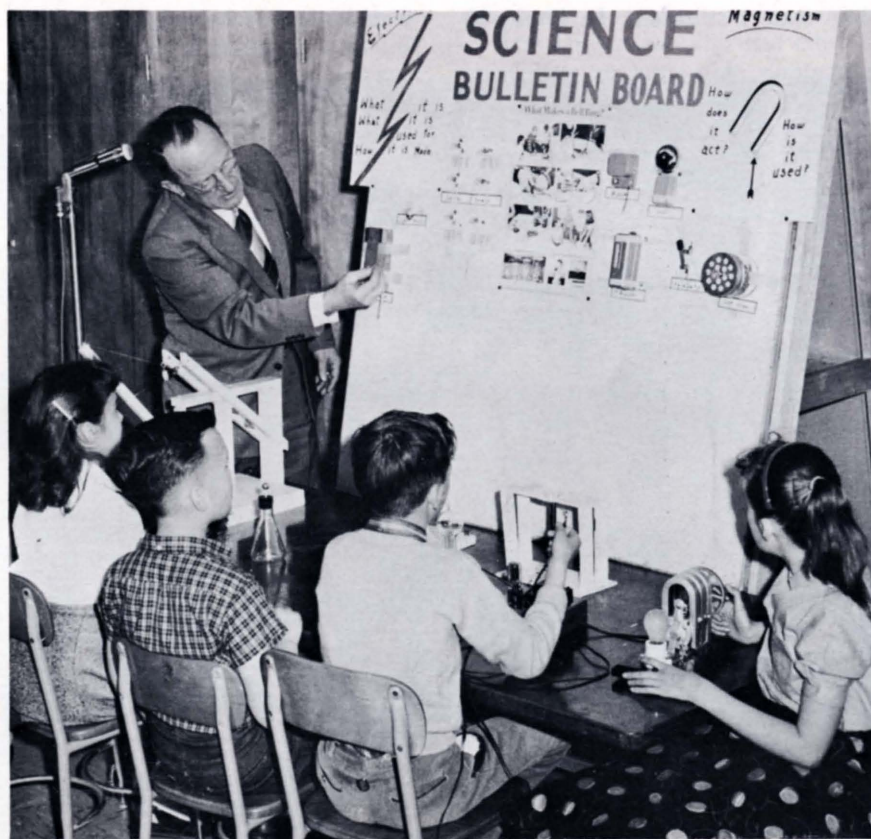


Figure 1. New ways of teaching are essential to today's new ways of thinking. The dynamic modern world demands intellectual flexibility of all citizens.

coupled with efforts to offset current inequities in property tax bases among the counties.

JUNIOR COLLEGES

In setting future goals for education in Utah, the decision makers will have to decide whether the state should encourage the development of more junior colleges. An answer must also be found to the question: Is it desirable to combine junior colleges and vocational schools?

As the state makes its decisions about junior colleges and vocational schools it should recognize the recent recommendation by the Coordinating Council on Higher Education that the state should control education only through the high school level. Such a recommendation should either be rejected or acted upon, and this goal-setting period seems ideally suited to such clarifying action.

NATIONAL IMPLICATIONS

To a large extent, institutions of higher learning throughout the United States are national rather than state institutions. In Utah, 40

percent of the annual income of the state's institutions of higher learning comes from the federal government.

Graduate schools in particular must have a nation-oriented philosophy as well as one geared to the home state. Education beyond the Bachelor's degree is required for more and more top level jobs. Universities that have excellent graduate programs are providing a large proportion of the nation's leaders. To stay among this group of schools, Utah's institutions have to have financial aid for graduate programs. This aid is generally available primarily from the federal government.

Federal aid for graduate students makes good sense since graduate students tend to be mobile. (They rarely remain in the particular state where they are trained.) Thus the benefits of education beyond the bachelor's level are spread through the nation. By striving to remain among the top schools in production of Masters and Doctors, Utah universities would be helping the state

and the nation, both directly and indirectly.

THE EDUCATION INDUSTRY

These facts tend to support the idea that out-of-state students should be welcomed rather than discouraged. Whether the view-point is national in scope or is limited by state geographic boundaries, the possibility of Utah becoming an education industry state deserves serious consideration.

The decision about whether education should be promoted as an industry in Utah obviously has a bearing on many other decisions that must be made about Utah's educational institutions. At present we seem to be inclining towards that end more or less by accident. In terms of meeting the needs of Utah residents, the state already has more schools at the four-year level and more duplication at the graduate level than is required. If we limit our thinking about higher education strictly to meeting the needs of Utah

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Figure 2. More parents are constantly demanding better education for more children. As class rooms become more crowded, teachers are increasingly hard pressed to teach their students efficiently and effectively.

Cultural Activities

Many modern-day societies are virtually inundated with material conveniences. Science and technology are daily freeing more and more people from the drudgery of long hours of exhausting physical labor.

But the bouyancy of a man's spirit bears little relationship to his physical well being.

The spirit of a man is fed by his lively interest in cultural activities (art, music, the humanities, literature). In Utah, as in the rest of the nation, these activities have too generally been considered expendable. We have surrounded ourselves with gadgets and then wondered at our gnawing discontent.

GOVERNMENT CONCERN

If we agree with Jefferson, that the first and only legitimate objective of good government is the care of human life and happiness, then certainly government must concern itself with cultural activities. Admittedly, no government can legislate culture people do not want. But government (federal, state, local) can do a great deal to arouse latent public interest. Time and again it has been proven that activities that seem likely to appeal to only a very few people can have an astonishingly wide response.

In general terms, the state can

provide leadership for educational programs at all levels. It can act to assure all types of artists of an atmosphere conducive to creative experimentation. State and local governments can see to it that courts and laws operate to insulate the creative individual from undue censorship.

By its own overt attitude towards the various art forms, government at all levels influences the attitude of its citizens. An interested, involved public is the best cure for inadequate financing. Government can help create such a public by seeking to encourage the arts for their own sake — as an expression of what is best in man.

FINANCIAL SUPPORT

The new National Foundation on the Arts and Humanities provides some badly needed financial support. But it does not relieve state and local governments of their responsibilities. If anything, it should stimulate them to even greater efforts. For example, states that have an art agency may apply for an annual matching grant of \$50,000. Public and nonprofit private groups that sponsor such activities as music, dance, drama, photography, fashion design, and creative writing can also apply for matching fund grants.

In Utah and throughout the nation, one major need is to educate young people about the various arts. The state, through its schools, and in other imaginative ways should provide its talented citizens of all ages with more opportunities to develop their potentials. Basic educational programs in the arts, coupled with the encouragement of publicized competitions and realistic prizes could help provide many lives with a badly needed new dimension.

PROVISIONS IN THE UTAH CODE

The committee assigned the problem of determining what Utah's goals should be in cultural activities concluded that the provisions in the Utah Code for a state library system are only in need of better implementation. It was noted specifically, however, that a well-staffed state library building that would include legislative resource material would add much to Utah's cultural wealth. The code provisions for the State Fair were also considered adequate, through administrative procedures could probably be made more efficient.

The Utah Code also was cited as providing an admirable summation of the functions properly assigned to a state's historical society. Actual operations of the Utah Society, however, were judged to be minimal in all major programs. Full implementation of the law would require an increased operating budget, the addition of personnel, and the construction of an adequate building.



Figure 1. The spirit of man is fed by his lively interest in cultural activities, one of which is music. At USU, other universities and most high schools, training in the techniques of music is available. At the community level, however, such activities have too generally been considered expendable.

An archives is a depository for much of a society's cultural heritage. The Utah Code provides for and spells out the obligations of the Utah State Archives. This organization, now an adjunct of the Historical Society, cannot even fulfill its lawful functions until inadequate budget, staff, equipment and building are remedied.

INSTITUTE OF FINE ARTS

The Committee decided that the Act creating the Utah Institute of Fine Arts seemed to have incorporated virtually all the necessary considerations. For example, as created, the Institute has the following objects and purposes: To advance the interests of the fine arts, including literature and music, in all their phases within the State of Utah and to that end to cooperate with and locally sponsor Federal agencies and projects directed to similar undertakings;

to develop the influence of art, literature and music in the adult educational field, thus supplementing the more formal instruction of the public school system;

to associate manufacturers, agriculturists and industrialists in these

endeavors, to utilize broadcasting facilities and the power of the press in disseminating information; and, in general,

to foster, promote, encourage and facilitate, not only a more general and lively study of the fine arts, literature and music, but to take all necessary and useful means to stimulate a more abundant production of an indigenous art, literature and music in this State.

Nevertheless several things could be done that would improve the day-to-day operation of the Institute.

SPECIFIC SUGGESTIONS

The specific suggestions for such improvement included:

1. Appointments to the Institute should be divorced from partisan politics.

2. Duration of appointments should be strictly defined and no one should have more than two terms. The Institute's statutes and bylaws should be revised to fit the times.

3. The head of the Institute should be prohibited from simultaneously heading any other state agency.

4. Utah might do well to adopt

the administrative pattern of the New York Board of Fine Arts. The New York Board has an administrative officer, an executive board of knowledgeable lay people, and an advisory boards of specialists.

5. The financial relationships and specific responsibilities of organizations such as the Institute and the Utah Symphony should be carefully detailed. Both units should seek to expand and improve their services.

6. Institute personnel should have ready access to, and freely utilize, consultation possibilities with specialists from universities and other organizations.

ADDITIONAL DISCUSSION POINTS

As state goals are set, policies should be established regarding state acquisition of art works by gift or purchase. Current holdings should be inventoried. Art displays should be provided in every major public building in the state.

A state commissioner of art might be advisable. Certainly an art-oriented architectural or design commission should be appointed to review the designs of state buildings. This group might also be charged with assuring the preservation of historical sites and buildings.

Attention should be given to trying to work out joint financing by the state and industries in the state of a program of public "education" in the arts. Based on experience elsewhere, such programs often become self-supporting once they are safely launched. They are of value to forward-looking industries in building a favorable corporate image.

A museum of fine arts building and a competent staff should be established separate from any university. Examples of national, local, and international art, a lending art library, and a traveling art works exhibit could be incorporated into the program.

Attention should be given to the possibility of televising cultural activities and to the building of a "library" of such television productions. Costs could perhaps be at least partly covered by charges to users.

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Figure 2. Painting, whether it be done to pass a class, for relaxation, or simply to fulfill a creative urge, adds a new dimension to one's life. Sometimes people must be helped to find new dimensions. Perhaps this could be one of Utah's goals.

Natural Resources

Clean air or polluted? Pure water or contaminated? Few people would have trouble making a choice between such alternatives.

But, how can anyone decide with certainty whether water should be used to produce crops, or by industry? Should agriculturally productive land be put under asphalt for the sake of convenience? Should a watershed be removed from livestock use or recreation to prevent water contamination? Is efficient mineral production from a given parcel of land more important than surface uses such as recreation?

These are just a sampling of the kinds of questions Utah must consider in setting goals for uses of her natural resources. Until much too recently, natural resources were

generally taken for granted. Land, minerals, water, air — they were there, they always *would* be there for man's use — Or would they? Only within very current times have Americans realized that these resources and their associated recreational potentials are not guaranteed "rights." Unless we learn to husband them judiciously, even the magic lamp called "science" may be unable to compensate for their abuse.

SOCIAL IMPLICATIONS

The goals set for Utah's land, water, air, minerals, and associated recreational potentials will do much to define the state's future. To achieve optimal benefits from these resources, Utah must be as alert to the probabilities of the future as to

the demands of the present. Every effort should be made to spread the benefits (economic and aesthetic) from Utah's natural resources equitably between present and future generations.

The final plans must be designed to maximize efficiency of use and minimize possibilities of waste. The search for economic efficiency, however, must be tempered by a strong sense of social justice. The adverse effects of decisions that may be efficient for the State as a whole but that may generate poverty and social stress for some segments of the population should be pre-determined and offset.

The state or some arm of government must accept the responsibility for seeking optimum social welfare in resource use. Adequate filling of such a role, however, requires adherence to valid criteria for allocation. And we are far from having those criteria defined.

CULTURAL ACTIVITIES

(Continued from page 118)

The State Board of Education should be encouraged and helped to provide more comprehensive training in the creative arts at primary and secondary levels. Students who are interested in pursuing careers in the arts should have access to more and better scholarship opportunities.

NOT SOLELY A STATE CONCERN

Local units of government and community service clubs can increase their sponsorship of cultural activities. More facilities should be provided throughout the state where artists can perform and exhibit their work. Talented individuals in all parts of the state would respond to the encouragement of local interest.

Vigorous leadership is needed throughout the state. It is true that culture cannot be effectively "forced" on people. But interests that might otherwise remain dormant in a person can be aroused by exposure to forceful examples of creativity in action. The spirit of modern man is in need of such stimulation.



Figure 1. Air, only recently considered a resource, becomes more polluted each year. Although Utah still enjoys relatively clean air, problems do exist in some areas. Automobile exhausts, industrial wastes, and burning trash all contribute to the problem.

We do know that the productivity of any *one* unit of any *one* natural resource depends on its relationship with other resources, both natural and man-made. And each situation has its own unique variations. Only with factual data in hand can the potential effects of various alternatives be adequately evaluated, and criteria evolved. Research can do much to pinpoint the relevant factors in each case, and some of Utah's goals for her natural resources may have to remain unstated until research can provide some answers to pertinent questions.

AIR

Throughout the nation the level of pollution of the air continues to rise. The prime question is: How long can we live with this constantly

growing threat to health, before being forced to drastic action?

The most important factors in given cases of air pollution vary with the area. Virtually every metropolitan area in the nation, however, suffers from some form of the malady. Whether the major contributors are automobile exhausts, industrial wastes, or backyard trash-burning fires, the result is pollution.

In Utah, the State Department of Health is collecting data on a continuing basis about air pollution at selected points in the central part of the state. The data indicates that much of the state still enjoys relatively clean air. Problems do exist, however, in Salt Lake Valley, along the Wasatch Front, and in Utah County, and these will increase with

our growing population.

Legislation authorizing the state, cities, or towns to deal with public nuisances is available in the Utah Code. The 1963 Legislature added two sections to the Utah Code which define air pollution as a public nuisance, make such pollution a misdemeanor, and grant authority to county commissioners to pass and enforce ordinances relating to air pollution. Are the counties capitalizing on this opportunity?

LAND

Among the questions that are being asked about Utah's land resources are:

1. Historically, private lands have been a prime source of a state's tax income. In Utah, where only some 21 percent of the land is privately

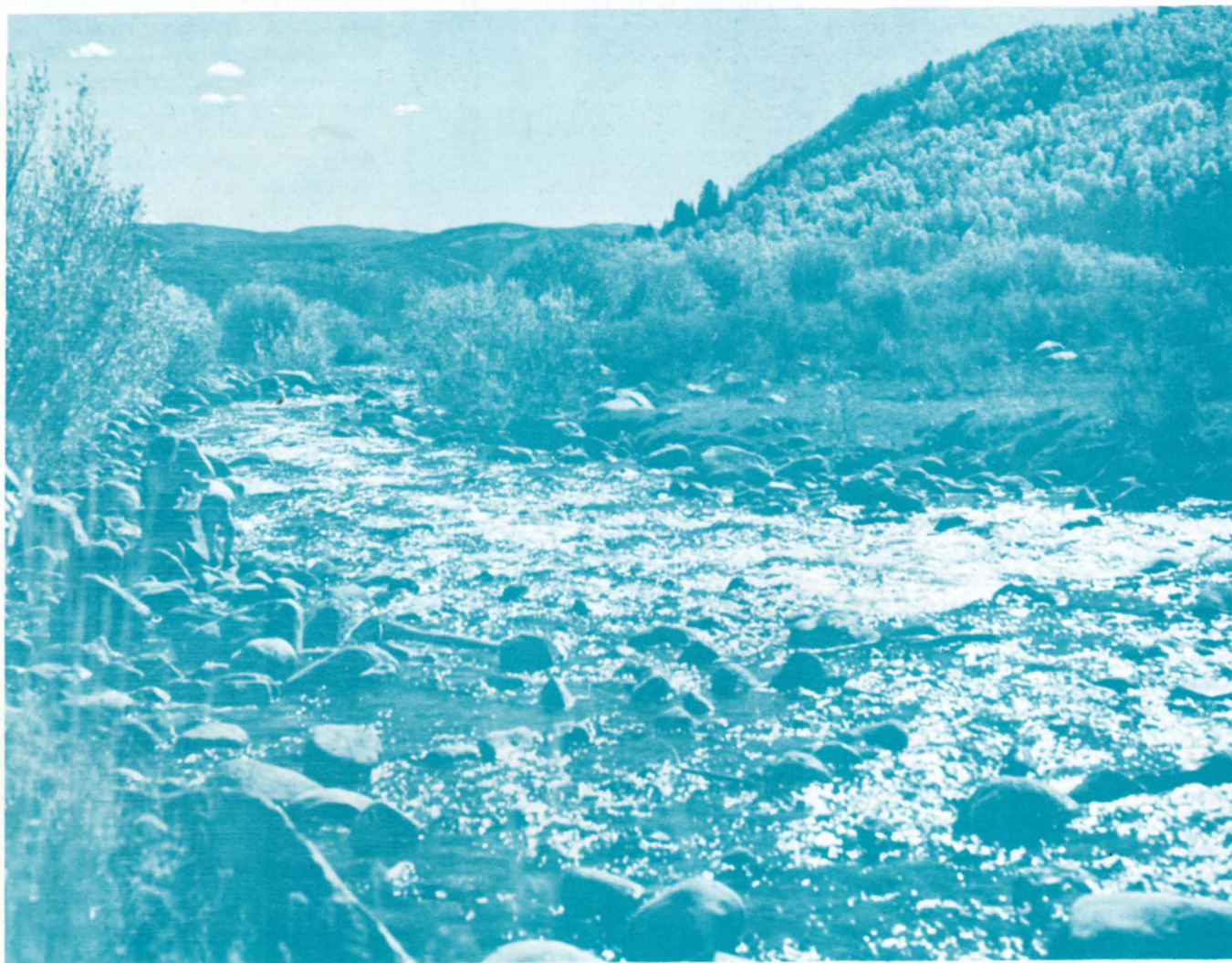


Figure 2. Utah is an arid region and the value of water increases yearly. How to conserve it, keep it pure, and put every gallon to the fullest use, are very real problems facing the state. —Photo by S. R. Tocher.

owned, shouldn't an equivalent amount of Federal domain be turned over to the State whenever Federal agencies acquire private holdings? Why shouldn't some form of taxation be paid by State and municipal agencies on condemned fee lands?

2. High quality topographic maps are essential to intelligent selection of industrial sites, to the efficient location and utilization of mineral and water resources, and to effective administration of state lands. Adequate topographic maps now exist for only half of Utah. Why doesn't Utah take advantage of the program in which state funds appropriated for topographic mapping are matched by Federal funds? The program allows the participating state to designate which areas should be mapped first on the basis of importance to the development of the state.

3. What should be the prime objective of those responsible for administering state lands? Should the state sometimes select lands for their recreational value rather than for their potential for producing a maximum economic return?

4. How are conflicts between goals of industrial expansion, development of recreation facilities, preservation of aesthetic values, and agricultural and urban needs to be solved? And by whom?

QUEST FOR ANSWERS

Some of the problems inherent in administering state lands have already received considerable research attention. Utah State University personnel are developing practical criteria to be used in the selection and management of state lands. Potentials for converting some public lands into prime recreation areas are receiving special consideration.

Another in-progress study will answer questions such as the following about Utah's public lands: What are the optimum uses for our thousands of acres of pinyon-juniper lands? Should they be cleared of trees and shrub growth? Would forage production and water yields be increased by such action?

In the final analysis, optimum utilization of Utah's land resources

depends upon the early completion of the cadastral survey of Utah lands, the topographic mapping of the state, and the study and cataloging of lands according to their resources and suitability for development. This might well be Utah's primary goal with reference to its land resources.

RECREATION

The recreation potentials of Utah's storehouse of natural resources can dazzle the imagination. The questions in this area are generally about how the potentials can be fully realized, and who is responsible for their development.

Perhaps Utah should promote further moves towards an extensive system of state parks. Pertinent data could be sought from other states that are traveling that route.

Over the next two years, Utah will receive more than one-million dollars from the federal government. This money is to be used to acquire outdoor recreation and park property. Wise use of these funds could materially enhance Utah's status as a scenic mecca for the rest of the nation.

Research at USU is developing criteria that can help decision makers evaluate the worth of a resource when it is used for recreation vs. when it is used for something else. The general lack of an "open market" valuation of recreation has been a severe handicap in the past.

Another question that will have to be answered soon, involves cooperation among federal, state, and private interests in the recreational field. All of these interests now have overlapping, opposed, and parallel objectives. Better coordination is essential, and could be a worthwhile state goal.

STATE WATER PLAN

It is imperative that the State of Utah have a water plan if it is to achieve the most beneficial control and use of its available water supplies. The state's water resources must be inventoried. New criteria may be needed for determining water rights. Future needs must be estimated as accurately as present techniques permit.

The 1963 legislature authorized

the Utah Water and Power Board to start the development of a state water plan and appropriated \$150,000 to begin the study. The 1965 legislature provided another \$250,000 to continue this work for the next two years. The Board has already issued several important pamphlets as a result of completed work. At the present rate of expenditure, it will take another five or six years to complete the plan.

Acceleration of the work would certainly benefit the state in innumerable ways. Can Utah afford to invest only \$125,000 per year in such a vital program?

ADMINISTRATION OF WATER RESOURCES

Utah must develop, conserve, and efficiently control all of her available water resources. The administration of Utah's water resources including the appropriation and distribution of water, and the preliminary steps in the adjudication of water rights is delegated to the State Engineer. The investigation and construction of new water projects is the responsibility of the Utah Water and Power Board. Water pollution problems are handled by the Water Pollution Board. Efficiency might be enhanced if Utah established a Department of Water Resources to coordinate all water activities in the state.

There has been good cooperation between federal and state water agencies (and Utah should fully appreciate the tremendous expenditures of federal money on Utah projects). Nevertheless, federal applications for large quantities of water to be used in the distant future are cause for concern. Utah should ascertain what steps can be taken to prevent further encroachment by the federal government upon the control and administration of water within the state.

The investigation and development of water wells and ground water reservoirs have not received attention comparable to that given surface water problems. Quantitative determination (in advance of total development) of the limits of development of ground water resources should be made so that



Figure 3. Electric shovels and heavy-duty trucks are mining oil shale for pilot plant operations. The plant seeks means of profitably using the vast reservoir of oil shale in Utah. —Photo by U. S. Bureau of Mines.

maximum utilization can be realized.

All plans for importing water should be investigated and those found to be sound should be promoted energetically. Experience teaches, however, that water once committed is difficult, if not impossible, to recover. In addition, the transfer of substantial amounts of water from one basin to another, or from one political subdivision to another, is known to be a difficult and hazardous undertaking. Utah should therefore be cautious about exchanging its present rights in the Colorado River and other streams for promised benefits in the distant future.

SATISFYING SOME DATA NEEDS

In setting Utah's goals for her water resources, access to factual data is essential. The criteria for decisions as important as those that must be made about water must have their bases in fact rather than guesstimates. Towards that end, current research at USU is developing techniques for determining the value of water in different uses (agricultural, domestic, industrial, and recreational). The existing laws and other institutions that affect water allocation are being evaluated

for their efficiency and equity. Studies are also being made of present investments in water use, storage, and reuse facilities relative to present and potential economic returns.

MINERALS

Goals relevant to the future of Utah's minerals are going to have to take into account the interactions of unbelievably diverse factors. The availability of water has a vital bearing in many cases. The relative importance of disrupted surface uses of mineral-rich land also demands consideration in some situations. In addition, the state must soon decide whether it will accept the responsibility for seeing that developing mineral industries do not generate severe social hardships and upheavals.

Especially urgent problems include those associated with Utah's impressive reservoir of oil shale and the Kaiparowits coal bed. In both of these situations, the availability (or lack) of water is a prime factor. If a coal-fired, power generating plant is to be built in the Kaiparowits area, the present pattern of water allocation will have to be sharply revised. In the oil shale

EDUCATION

(Continued from page 116)

residents, two universities with programs at the graduate level would probably be adequate. Unless the state commits itself to an expanding program of higher education for non-residents, i.e., an "education industry," perhaps some reduction in present facilities would be advisable.

INFORMATION NEEDED

More factual information is needed before Utah can make a valid decision about whether it should become an education industry state. At the very least, data should be collected on actual and potential income and outgo associated with out-of-state students. An extensive interdisciplinary study, however, would be far more meaningful. Such a study should have economists, sociologists, and psychologists cooperating in an attempt to appraise the overall effects on Utah of various populations of out-of-state students. Direct and indirect effects in both the economic and social spheres could thus be allowed for in the final evaluations.

The increasingly critical need for flexibility — in programs and in individuals — must be built into any statement of goals for education in Utah. By realistically gearing these goals to the probabilities of the future we can do much to assure the welfare of coming generations.

area, both water rights and surface uses of the land must influence final decisions.

We need to know the resource requirements of land and water necessary for the development of these industries. Research can provide the essential data. Research can also provide a basis for judging the likely social impact of such developing industries. Then pre-planning may be able to offset any probable difficulties.

Whether Utah's natural resources fulfill their potential for enhancing her future depends in large measure on today's decisions.

Government Structure

In the abstract, as words on paper, government structure arouses little public interest, much less a sense of urgency. When seen as individual jobs, as power, as the ravenous consumer of tax dollars, however, — government structure comes alive.

The Goals for Utah program on government structure concentrated on the non-executive branches of the state government and on local government units. This was done to avoid overlapping the work of the Little Hoover Commission.

At the outset, the committee agreed that there was nothing sacred in the accidental, and often topsy-turvy, growth of Utah's governmental units, structure, and techniques of personnel hiring and management. Government, whatever its specific form, is simply a means to accomplish the ends of the people who are being governed. Thus, government structure that does not adapt to the changing needs of the people is more of a hinderance than an aid to progress.

EFFICIENCY AND CENTRALIZATION

Based on the facts available to them, the committee members had to conclude that Utah has too many small units of government. These units often duplicate activities and occasionally conflict with one another.

Would a less complex government design mean more economy of operation and more satisfactory service to the citizen? The answer is almost certainly yes. Reform in that direction, however, must involve some movement toward centralization. And centralization is a poorly understood, emotionalized word in America. Even as we turn more and more to federal and state governments for action on problems too complex for localized solution, we cling to the traditional praise of

local units of government. In setting long range state goals it may be useful to compare data on costs of maintaining small municipal units of government relative to what they can accomplish in today's world.

GOVERNMENTAL UNITS

Citizens of Utah would do well to consider what kinds and combinations of governmental units (counties, towns, townships, special districts, or cities) could do the most efficient job in this state. In actual practice, do small government units guarantee popular control? Or has this simply become a reassuring myth that we perpetuate because it is comfortable? What are the facts in specific localities?

Perhaps some other type of municipal unit would be more satisfactory along the Wasatch Front than the present city-county-special district arrangement. Rural areas of the state might get more for their tax dollars by converting to the New England Town type of local government. In this system, all the people within given geographic boundaries, regardless of what town they live in or near, elect representatives. These representatives provide the government for the entire area. A yearly meeting of all the voting citizens in the area provides the opportunity to vote on budgets and other proposals and to elect the next year's representatives.

Whatever units are adopted, each should have a chief executive who is responsible directly or indirectly to the people. This executive should be given the responsibility and power to coordinate all functions within his unit. He should also be charged with working towards maximizing cooperation with the state's other units of government.

LEGISLATIVE REFORMS

It was widely concluded that the mechanics of Utah's present system of legislative operation reflect the needs and thinking of the 19th rather than the 20th century. Several possible changes were suggested in the interest of efficiency and effectiveness.

Perhaps Utah should have one, rather than two, legislative chambers now that the Supreme Court has indicated that state legislatures should be based on population. A study made of Utah's 1963 legislature strongly indicated that the operations of a single house would probably be more efficient than those of two houses. In addition, it would be much easier for the public to keep informed about the happenings within a one-chamber legislature.

Can any state legislature (whether consisting of one or two houses) cope with today's problems and rapid changes with anything less than an annual session? Certainly the state's legislators have to solve problems that are more weighty than those of counties or cities. Yet, in Utah, most governing bodies of cities, towns, and counties meet at least once a month and some meet several times per week. Whenever the state legislature does meet, it probably should be for at least 90 days and could well have an indefinite termination date.

NEED FOR PROFESSIONAL ASSISTANTS

Even if the decision is to retain present legislative procedures, staff assistance to the legislators should be substantially increased. This assistance should be operative during and between sessions. Lack of specialized assistance, office space, and adequate secretarial help, is most

detrimental to legislators who sincerely want to serve their constituents. Legislators whose primary aim is to satisfy a limited special interest group or party rarely require such assistance.

One of the Legislature's most urgent needs is for permanent professional state employees who would be responsible for reviewing past legislation. Many of the laws and acts that have remained unexamined for several decades are totally irrelevant in today's world. Permanent qualified assistants to the legislators should be charged with evaluating the worth of out-dated parts of Utah's Code and, when advisable, they should recommend and push for the repeal of senseless statutes.

UNBIASED HELP

The legislators also need unbiased help in evaluating the potential worth of legislative items that may or may not be actively fostered by lobbyist groups. Daily pressures often prevent legislators from impartially appraising legislative needs.

Items that are not specially and repeatedly brought to their attention by interested individuals and groups may go unrecognized until a crisis occurs. Legislation that is zealously promoted by its devotees should be routinely subjected to rigorous (and time-consuming) review and evaluation. In general, lobbyists are not noted for unbiased concern for the public good.

Too, the mechanics of writing good legislation require more than admirable intentions and worthy causes. The legislators should have access to professional assistance in the drafting of legislation. The precision with which a law is worded can materially affect its final worth.

The returns in improved efficiency would far exceed the costs of providing these various kinds of assistance. Currently, Utah's budget for its legislative council and auditor (\$80,000 in 1959-61) is far below the national median (\$140,000) for legislative councils alone.

JUSTICES OF THE PEACE

Questions have been raised periodically about the overall advisability of maintaining the current Justice of the Peace system in Utah. Only about 3 percent of Utah's Justices of the Peace have had training in the law. Even more disturbing — many do not even have access to reference books in which they could look up the laws relevant to cases they are to adjudicate. Perhaps a traveling or circuit judge would be a more efficient arrangement. The establishment of a system of county courts should also be considered as an alternative.

PROFESSIONALISM AND PUBLIC APATHY

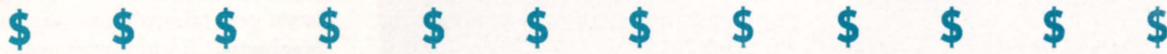
Structure alone, however, no matter how efficient, cannot assure good government. An attitude of professionalism among government personnel is equally essential. To promote that attitude, standards should be raised for the employment of government personnel. An "across

(Continued on page 125)



Figure 1. Government structure must remain perennially in flux if it is to be efficient. Only through dialogue and periodic redefinitions of the consensus can a government move to accomplish the desires of those being governed.

Economic Development



A commonly accepted definition equates economic development with rising per capita income. In essence then, the pattern of a state's economic development helps shape the lives of its people. Utah thus should consider all the social implications of economic development alternatives before setting its goals.

In Utah, the prime problems of economic development are associated with the technological displacement of labor and the declining economic importance of agriculture and mining. These problems are not unique to Utah, but some of the relevant factors are. Utah is endowed with unique combinations of natural resources, climate, and topography, and with an unalterable geographic location. In addition, the prevailing philosophy of the people

of the state affects their attitudes towards economic alternatives.

GENERAL PROBLEMS

Utah must find ways to achieve and sustain a rate of growth in overall economic activity that at least matches the average for the nation. The state also must be sure that the returns from increasing economic activity are equitably distributed over the entire population.

Innumerable specific questions are associated with each of these general needs:

What can the state do to facilitate the growth of industry, agriculture, and services?

What are the responsibilities of Utah's financial institutions, chambers of commerce, public utilities, and universities for encouraging economic development in the state?

Should land of excellent agricultural productivity be used for housing, industry, roads, and airports when less productive land is equally suitable? Who should decide, using what criteria?

WHAT IS OUR STATUS?

The state itself and groups within the state might first aim to develop a realistic appraisal of Utah's economic strengths and weaknesses. Some research data are available. What is lacking could be commissioned. Only dispassionate facts about Utah's physical and human resources can provide a reasonable basis for pre-evaluations of attempts to expand existing, or launch new, economic activities.

What do we have to work with? In what activities is Utah likely to have some competitive advantage? What kind of training would be most useful to the state's presently and potentially unemployed citizens?

RESPONSIBILITIES OF EXISTING ORGANIZATIONS

The financial climate of a state can either invite or repel business ventures. The expansion, contraction, or demise of a given business enterprise often depends on whether that business has access to credit resources on favorable terms. The financial institutions in Utah might profitably consider revising their procedures and philosophy to be more conducive to business initiative and expansion.

Chambers of Commerce throughout Utah might invest in research that would allow an impartial evaluation of the worth of past public relations programs. If the desired results are not being achieved, perhaps research could develop more efficient, effective methods.

Public utility companies in Utah could determine whether they are offering their products to consumers at rates that encourage heavier use of those products. Favorable rates for

GOVERNMENT STRUCTURE

(Continued from page 124)

the board" merit civil service could provide the answer. Higher salary schedules would be necessary to attract specially trained personnel. The activation of such schedules would require public advocacy, however, and overcoming public apathy is a major problem at virtually all levels of government.

This public apathy adversely affects numerous facets of government besides salary scales. Local civic groups and service clubs might consider accumulating facts and engaging in professionally designed campaigns to inform the people of what is being done, why, and how. Perhaps personnel from the state's universities could provide research data on the relative value of different kinds of information-giving programs. Reluctance of local government units to inform the public might be construed as indicating fear

of an unflattering judgment if the public really understood what local government involved.

In setting Utah's goals for its governmental structure, a prime consideration must be that the best means for today's ends may not be those inherited from the past. If their recommendations would be acted upon, professional management consulting firms could be commissioned by the state to analyze the needs of the entire state or certain areas. The cooperation of local civic groups and service clubs could then be profitably sought in evaluating the recommendations and deciding which are the most urgent.

New situations and problems characteristically demand newly imaginative solutions. Certainly local governments within every state and state governments throughout the nation should have the courage to experiment with promising structural designs.



Figure 1. Utah's universities help the state develop economically by initiating relevant research and by encouraging state and business awareness of the value of research data.

public utilities are definitely factors in industrial decisions about where to locate and whether expansion would be worthwhile.

The state's universities can do their part by initiating relevant research and by encouraging state and business awareness of the value of research data. They can also keep themselves acutely alert and responsive to the changing educational scene. The traditional approach to student training should not be en-

shrined without being subjected to periodic impartial examination and re-evaluation.

ZONING AND GREEN BELTS

Questions of zoning and responsibility for the beautification of metropolitan areas can not be neglected with impunity. The destruction of orchards and the loss of outstanding croplands simply in the name of convenience should not be thoughtlessly condoned. The state might well set itself the goal of

developing and establishing equitable criteria for evaluating such situations. It could also accept the responsibility for preventing undue haste in destroying agriculturally productive land whenever it is a party to these decisions.

POSSIBLE ECONOMIC PANACEAS

Three possibilities are generally mentioned as Utah's prime economic development alternatives.

One is expansion of the state as a distribution center. Realistic evaluation, however, generally indicates relatively little likelihood of our competing effectively with Denver, San Francisco, and Los Angeles in such endeavors.

The second possibility involves more attention to exploiting our mineral wealth. The third calls for a vigorous pursuit of tourist dollars.

MINING AND MINERAL PROCESSING IN UTAH

Mining has been important in Utah ever since the late 1800's. Over the years, the state's mineral production grew steadily in volume and value, but was rather limited in types of minerals until after World War II. During the post-war period, however, the growth of markets in coastal and mountain states attracted investment capital to develop Utah's latent mineral resources such as oil, gas, uranium, vanadium, phosphate, clays, limestone, and cement rock (table 1).

In considering the economic potential for the mining industry in Utah, the relationship of mining to manufacturing must be recognized. A relatively small portion of Utah's mineral product is shipped out of the state in a "raw" form. Processing varies from milling of nonferrous ores, through end-product processing in oil refining and in most of the nonmetallic minerals. The payrolls, supply purchases, transportation, general service-industry services, taxes, and other expenditures related to mining are thus magnified in the economy to the extent of the associated processing (manufacturing) activities.

For example, in terms of people employed, the ratio in the cement industry is about one man in mining

to 14 in processing the mined rock to finished cement. The employment relationships for Utah's steel industry for the period from 1940 to 1960 are presented in table 2.

In 1964, Utah's three principal new-wealth producing industries had a combined total production value of \$1,279,800,000 divided as follows:

Agriculture\$168,000,000
Mineral production ..\$392,500,000
Manufacturing\$719,000,000

A conservatively estimated one-third of the \$719 million for manufacturing would represent the processing of minerals. The total mineral contribution thus was \$628 million, or about half of Utah's total new-wealth production in 1964.

Such statistics emphasize the importance of Utah's mining and mineral processing activities to the state's economic health.

If Utah's mineral industry is to grow, much if not all of the capital will probably have to come from

Table 1. Utah mineral production, historical pattern †

Year	Total value of five metals,‡ coal and salt in thousands of dollars	Percent of total production	Total value of all other minerals in thousands of dollars	Percent of total production	Total value of all minerals in thousands of dollars
1910	36,610	93	3,624	7	39,234
1920	69,640	91	6,897	9	76,537
1930	59,357	92	4,867	8	64,224
1940	94,648	90.0	9,745	10.0	104,393
1945	113,181	88	14,780	12	127,961
1950	191,977	83.5	37,989	16.5	229,966
1955	261,973	79	70,029	21	332,002
1960	210,127	49	222,585	51	432,712
1964	193,216	49	199,251	51	392,467§

†Taken from 11 October 1965 report of Goals for Utah Natural Resources Committee

‡Copper, lead, zinc, silver, and gold

§Preliminary figure



Figure 2. Utah, in contrast with many other states, remains a land with recreational resources virtually undeseccrated by civilization. Dollar Lake is just one example of Utah's isolated lakes. —Photo by S. R. Tocher.

outside the state. The high risk involved in exploration and development operations, and the high unit costs require tremendous initial investments.

The high risk is illustrated by the fact that wildcat drilling in Utah finds oil or gas in only one out of every nine holes drilled, at an average cost of \$112,000 for each hole. The high unit cost is illustrated by the investment of \$40 million by Texas Gulf Sulphur Company in its Moab potash operations. An investment of \$75,000 to \$100,000 per man employed is indicated.

Utah must maintain an investment environment fully competitive with other investment-seeking areas if the state wants to encourage the realization of its potential for mineral production and processing.

Also, since most of Utah's mineral products, both raw and processed, must be marketed outside of Utah, they are in direct competition with similar products from other areas. It is to the state's economic advantage, therefore, to try to provide the industry with conditions favoring profitable production and marketing. This would encourage the continuation of present operations and help stimulate expanded and new operations.

TOURISM AND THE STATE'S ECONOMY

Utah undeniably can capitalize on several "built-in" advantages if it decides to actively compete for tourist dollars. Our spectacular scenery, open spaces, and clean air are coveted by many city-dwelling, smog-breathing inhabitants of other areas of the United States. But we also need to be aware of the pitfalls of tourism as an industry.

The seasonality of tourist traffic and the concomitant seasonal demand for labor are drawbacks. Another often cited detriment is that tourist activity correlates closely with the national economic picture. If the general economy slumps, so does the tourist industry around the country.

Among the plus factors is the fact that many especially scenic areas in Utah have recently been made much

Table 2. Steel industry †

Year	Mining iron ore, coal, limestone	Manufacturing			Total	Ratio, mining to manufactur- ing employment
		Blast furnace and coke	Steel works and rolling mills	Steel-using industries		
1940	580	300	0	1,548	2,428	1 to 3.2
1950	1,960	600	4,846	4,098	11,504	1 to 4.9
1960	1,882	900	4,483	7,012	14,277	1 to 6.6

†Taken from 11 October 1965 report of Goals for Utah Natural Resources Committee

more accessible to auto traffic. Road building activities by both state and federal agencies have opened up areas that had previously been closed to the average tourist. Also, several of our most promising tourist attractions are located in areas of the state that badly need an economic boost.

Then too, the United States population is expected to about double by the year 2000. Within the same time period, demands for outdoor recreation are expected to increase from three to 10 times. Utah could undoubtedly satisfy a substantial share of that projected demand and profit in the process if comprehensive plans are made and activated now.

UTAH'S HUMAN RESOURCES

In the final analysis, the state cannot afford to tie itself too closely to any *one* means of achieving economic development. Each possibility is likely to contribute some-

thing worth-while to the overall picture.

Regardless of what specific goals are chosen, however, the importance of the human resources of the state cannot be overstated. Rather than clinging to the traditional "higher education for everyone," now would seem an excellent time for the state to assess what is really needed both by its people and its economy, in the way of education and training. People needing jobs must be trained to fill the jobs that need people.

Technological development *does* displace labor in some cases. But it also enhances the demand for certain kinds of labor. Utah may find that investing heavily in educational facilities that produce a versatile work force is investing in a consistently good rate of economic growth. Certainly those setting the goals for Utah's economic development should remain keenly sensitive to the full implications of their decisions.

CHANGE IN UTAH JP COURTS?

(Continued from page 102)

the organization and personnel to best serve the lower court needs of the people of Utah?

Constant scrutiny of the structure and function of all three branches

of government — legislative, executive, and judicial — is essential, if needed reforms are not to be neglected, so the conduct of government can keep pace with our dynamic society.

SOME QUESTIONS

The people of Utah, and particularly their representatives in the Legislature, need to answer the following questions concerning their lower courts:

1. How should Utah's lower court judges be selected?
2. What type of training should they have?
3. Should they be required to pass some kind of examination?
4. Are part-time judges adequate?

5. What is the most efficient case load judges should carry?

6. How should the judges be paid?

7. Who should supervise the judges?

8. What type of equipment and court-room facilities should be used?

9. What cases should they be allowed to hear?

10. What arrangements for appealing decisions should be made?

Transportation and Regulation

Possible state goals for transportation systems are severely circumscribed by heavy federal involvement in the transport field. This is also true of rate structure regulation. We can regulate many businesses, or develop a set of state parks whether other states do or not. But highway routes and transport regulations generally require consultations and agreements with other states and/or federal agencies.

New goals for the use of established highway facilities are out of the question. Eliminating existing facilities or converting them into new forms can rarely be accomplished except over long periods of time. Some present and potential problems, however, do seem subject to solution.

HIGHWAY SAFETY REGULATIONS

There seems little doubt about the state having a great deal of respon-

sibility for factors that affect the safety of highway travel. Several goals could be established in this area.

Educational campaigns could be increasingly emphasized. Highway safety in the final analysis depends largely upon the actions and attitudes of individual drivers. The state could evaluate past research on how the public responds to various kinds of informational programs and initiate some specific efforts that use proven methods.

The state's role in seeing that enforcement of traffic laws is relatively uniform around the state could become even more active. Differences in enforcement of regulations can lead to public ridicule and lack



Figure 1. More cars equal more roads. Highways are expensive to construct and maintain. Whether federal or state funds are used, the highway dollars come from John Q.'s pocket. As Utah sets its long range transportation goals, citizens must realize that the improved roads must be paid for.

of respect for laws in general. The courts that hear traffic violations could strive for more uniform judgment of similar cases.

A committee for public safety, with members including highway insurance adjusters, highway users, law enforcement personnel, and other interested parties, might serve several useful purposes. Such a committee could coordinate new and improved educational programs, set law enforcement goals, recommend ways to improve safety, and help solve problems of financing relevant programs.

TOLL ROADS

The state might consider introducing taxes of the toll variety to alleviate congestion problems in given areas at given times. Such taxes could reduce the social costs of rush hour congestion. In addition, they would provide a reasonably accurate measure of true "consumer" demand for certain kinds of roads in certain locations. Data from pilot studies involving this kind of tax program might also help develop better ways to estimate future road needs.

COST SHARING

Another goal for the state could be the establishment of ways and means to have private enterprises share the costs of alleviating highway problems that the enterprises

have generated. When a business creates a congestion problem along a highway where no problem existed until the business was established — that business should help defray costs associated with correcting the problem. At present, some situations are not adequately covered by zoning laws. In other cases, the zoning laws are not enforced.

RATE STRUCTURES

Recent court decisions indicate that minimum rates in trucking and railroad enterprises will have to be tied more and more to costs of service. This could make it increasingly difficult for public units to regulate minimum rates and may allow railroads to exert increasing pressure on certain segments of the trucking industry. Less public control rather than new rates or more stringent control seems probable. State Public Service Commissions, however, will still be busy. Utah's commission might look to the future and seek data that will help them compile "cost indexes" to facilitate evaluations of proposed rates to be sure they are not below costs.

The state of Michigan is just finishing its seventh year of such work. They had to hire a cost staff which has grown to five persons. This staff helps the commission a great deal in rate cases. Utah might

benefit by adopting some of Michigan's techniques.

RAILROAD RATES

Discrimination in railroad rates seems to be largely a myth, or at least self balancing. If one state is "favored" on one product, another gains on some other product. Certainly the seeking of low rates should not automatically be made a state goal.

In reality, low rates are not necessarily to the advantage of the state involved. For example, the sugar industry would like to have the rate as high as possible between Crockett, California, and Salt Lake City. Utah's candy industry, however, would like to have the price of sugar as low as possible. In turn, this latter industry desires to have the freight rate from Chicago to Salt Lake City on candy as high as possible. Therefore it depends on whose ox is getting gored when it comes to freight rates.

PUBLIC TRANSPORTATION

Urban areas around the nation are strangling on their current load of automobile traffic. In Salt Lake City, more and more resources have been devoted to making it possible to commute by private autos. As a result, the bus line finds it increasingly difficult to earn a fair return on its investment.

Sooner or later the Public Service Commission will have to answer the question, "Is there a time we say to a franchised public monopoly, faced with declining demand, we are sorry, but like any other commercial venture, you have to live with the demand pattern as it now exists, and if you are unwilling, you will have to close your doors?" At this point the public, if it still desires at least some bus service, would have to subsidize the company or step in and buy the assets of the bus line. If the latter alternative is chosen, and if operating costs could not be covered, the enterprise might still have to be subsidized out of tax revenues.

Data collection and consideration of possible alternatives now might save the state some difficult times later.

(Continued on page 132)



Figure 2. Though a highway may be wide, straight, and well surfaced, safety thereon depends largely upon the actions and attitudes of individual drivers. Perhaps driver education and safety campaigns should be emphasized more in Utah. —Photo by Lemuel Earl.

Former director dies

DAVID A. BURGOYNE

Dr. Phillip Vincent Cardon, the ninth Director of the Utah Agricultural Experiment Station, died October 13, 1965, in Salt Lake City after an extended illness.

He was born April 25, 1889 at Logan, Utah to Thomas B. and Lucy Smith Cardon, Cache Valley pioneers. His father learned the trade of watch repairing from a sergeant attached to Johnston's Army and opened a jewelry and watch repair store in Logan.

Dr. Cardon learned early in life to endure hardships. When he was a small boy his father's jewelry store failed and the creditors took over almost everything the family owned, including a small herd of cows which he had to drive to the Sheriff's sale. With the aid of friends, and family cooperation, the store was again established and is still operated by the third and fourth generation of Cardons.

P. V. attended Utah State University (then Utah State Agricultural College) and was the first editor of *Student Life*. At one time he decided it was his duty to help support of the family. He decided to drop out of school, but a group of school friends called on him and practically forced him back to school. To these friends he was always grateful. He graduated in 1909 with a B.S. degree and was employed at the Dry-Land Station at Nephi, Utah. During this time he became closely associated with such men as F. D. Farrell, later president of Kansas State University, William Jardine, who became Secretary of Agriculture, Dave Stevens, later in charge of dry-land agriculture for the United States Department of Agriculture and James T. Jardine, later Chief, Office of Experiment Stations.

DAVID A. BURGOYNE is emeritus professor and Assistant Director of the Agricultural Experiment Station.

These men were all graduates of Utah State University. Dr. Cardon often gave credit to these men for giving him the inspiration and encouragement to aspire to greater things.

In 1913 Dr. Cardon married Leah Ivins, a home economist with whom he did extension work on a Demonstrative Train and at Farmers' and Homemakers' Institutes in 1912. She is the daughter of the late A. W. Ivins, a member of the Council of Twelve in the LDS (Mormon) church. He credited his wife with drive and determination which helped him to achieve in every undertaking.

P. V. Cardon was a special agent with the U. S. Department of Agriculture, 1910-11; scientific assistant 1911-13; assistant agronomist, 1913-14; and performed cereal investigations at the Nephi Dry-land Station. He later engaged in cotton investigations, 1914-18, in the cotton belt; and in dry-land agriculture at Moccasin, Montana, 1918-19. He was a professor of agronomy and an agronomist at Montana State Agricultural College and Experiment Station 1919-21. He served as Director, College of Southern Utah, 1921-22; Editor, *Utah Farmer*, 1922-25; Farm Economist and Extension News Editor, Utah State University, 1925-28; and Director, Utah Agricultural Experiment Station from 1938 to 1935.

During Director Cardon's administration, several new cooperative projects with various bureaus of the United States Department of Agriculture were undertaken. Three new field stations were established during his administration. They were located in Millard, Washington, and Box Elder counties to study alfalfa seed problems, early fruit production and orchard management, respectively. However, much research was temporarily discontinued to enable the Station to assist in numerous



P. V. CARDON

agricultural emergencies caused by the economic depression which began in 1929.

The broader objectives of the research conducted during Director Cardon's administration were modified by the increasing recognition of the interrelationship of social and economic, as well as physical and biological factors affecting agriculture in Utah. Research was continued on problems involved in production practices on both irrigated and dry land, but other supplemental research extended to the rangelands. The importance of these lands as natural resources, of common concern to all the people, was defined.

This extension of research led to the farm communities themselves, their social structure, their economic status, their land use practices, the adequacy of water supply, and to water and soil conservation. Out of these studies came a clearer concept of the agricultural pattern of the state, the types of farming, and the interdependence of farm and range lands.

While on leave of absence, he

(Continued on page 132)



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CONTRIBUTIONS TO RESEARCH

Kennecott Copper Corporation	\$5,000 for studies on the role of vegetation and soil in watershed yield
Esso Company	\$2,500 for studies on lining of irrigation canals and reservoirs
United States Steel Corporation	\$2,500 for studies on air pollution
University of Texas	\$1,250 for studies of enteric diseases of neonatal calves
American Cyanamid Company	\$1,000 for studies of Staphylococcus aureus infection in turkeys: pathogenesis, transmission, control
	\$500 for miscellaneous insect investigations
Trukey Marketing Board	\$1000 for studies of advertising and pricing practices of food retailers
Geigy Company	\$750 for studies of the biology and control of mites and insects on fruit trees
Phillips Petroleum Company	five tons of ammonium nitrate fertilizer to be used in fertilizer research

DIRECTOR DIES

(Continued from page 131)

obtained an M.S. degree in Agricultural Economics at the University of California in 1933. As Director of the Station, he was also Regional Director of the land policy section, Agricultural Adjustment Administration, and USDA, 1935-35.

In 1935 Dr. Cardon resigned as Director of the Utah Agricultural Experiment Station to assume duties as Principal Agronomist in charge of forage crops and diseases, Bureau of Plant Industry, USDA, 1935-39. In 1939 he was appointed Assistant Chief of the Bureau of Plant Industry. In 1942 he was appointed Assistant Research Administrator and in 1945 he became Administrator of Agriculture Research Administration. He resigned his position to accept a less strenuous post (after a heart attack) as Assistant Chief of the Bureau of Plant Industry, Soils and Agricultural Engineering.

In 1948 Utah State University

conferred on him a Doctor's degree (LLD) in recognition of his outstanding achievements. Also in 1948, having regained his health, he was appointed Research Administrator and remained in this position until he retired in 1951. Upon retirement, "he was retreaded" and appointed Director of the USDA Graduate School in 1952.

In 1953 he became Director of the Food and Agriculture Organization of the United Nations, stationed in Rome. He was elected to a four-year term by the vote of 74 nations. Physical exhaustion, however, forced him to retire in 1956.

From 1956 until his death he was called on for advice and council by the F.A.O. and many other governmental agencies. In addition he filled many short USDA missions to foreign countries.

Besides his widow, he leaves a family of three children; Lucy Elizabeth (Mrs. Calvin L. Rampton), Margaret Ivins (Mrs. Gerald Wissler) and son Philippe.

TRANSPORTATION

(Continued from page 130)

MORE CARS — MORE TAXES

In this country, a population growing in numbers and affluence equates with more cars on the roads. As existing highways prove inadequate for the increased traffic, public requests for better facilities become more insistent. In Utah, new, improved roads also must be constructed before the state can capitalize fully on some of her more remote scenic resources.

Highways, however, are expensive to construct and maintain, and when highway construction booms, so must taxes. Whether federal funds or state, the dollars for highways come from John Q.'s pocket.

Proliferating highways pose other problems besides those associated with financing. For example, who should assume the responsibility for keeping in repair the state highways which to some extent are being superseded by various freeways? Should the counties have to accept the responsibility for maintaining more of the roads in the state? Should the legislature organize a central agency to administer the expenditure of state-collected funds by cities and counties for streets and highways? If the counties are held responsible for more roads, should the state develop and enforce certain standardized criteria for road construction and maintenance?

BUSINESS AND TRADE REGULATION

Utah currently suffers from some overlapping of regulations. In some cases, the personnel in a particular agency will be regulated by one group and the building or facilities will be regulated by another. At the present time the Public Service Commission collects a fee from each of the groups that it regulates to cover the cost of that regulation.

The state might consider whether these regulations are for the benefit of the public or the benefit of the people being regulated. It would seem reasonable that if the public is the main beneficiary, perhaps it should bear some of the costs.